



Mr. Lewis Pillis  
Department of Environmental Quality  
Blue Ridge Regional Office  
3019 Suite C, Peters Creek Road  
Roanoke, VA 24019

Date: June 3, 2016

Subject: VPDES Permit Renewal Package  
VPDES # VA0090671

Dear Mr. Pillis,

Enclosed please find the following documents for the VPDES Permit Renewal for the Lower Jackson River Regional WWTP, VA009061:

- Form 2A
- Form 2F
- VPDES Permit Application Addendum
- VPDES Sewage Sludge Permit Application
- Public Notice Billing Form

Attachment A analysis information is not currently available. It is anticipated that these results will be received in approximately three weeks. As soon as the results are received they will be submitted to you for review.

If you have any questions or comments, please feel free to contact me at (540) 862-5138.

Sincerely,

A handwritten signature in blue ink, appearing to read "B. White", written over the word "Sincerely,".

Brian T. White,  
Plant Manager, Lower Jackson River Regional WWTP

Cc: Gary Hepler, Assistant County Public Works Director  
File

FORM  
**2A**  
NPDES**NPDES FORM 2A APPLICATION OVERVIEW****APPLICATION OVERVIEW**

Form 2A has been developed in a modular format and consists of a "Basic Application Information" packet and a "Supplemental Application Information" packet. The Basic Application Information packet is divided into two parts. All applicants must complete Parts A and C. Applicants with a design flow greater than or equal to 0.1 mgd must also complete Part B. Some applicants must also complete the Supplemental Application Information packet. The following items explain which parts of Form 2A you must complete.

**BASIC APPLICATION INFORMATION:**

- A. **Basic Application Information for all Applicants.** All applicants must complete questions A.1 through A.8. A treatment works that discharges effluent to surface waters of the United States must also answer questions A.9 through A.12.
- B. **Additional Application Information for Applicants with a Design Flow  $\geq 0.1$  mgd.** All treatment works that have design flows greater than or equal to 0.1 million gallons per day must complete questions B.1 through B.6.
- C. **Certification.** All applicants must complete Part C (Certification).

**SUPPLEMENTAL APPLICATION INFORMATION:**

- D. **Expanded Effluent Testing Data.** A treatment works that discharges effluent to surface waters of the United States and meets one or more of the following criteria must complete Part D (Expanded Effluent Testing Data):
  - 1. Has a design flow rate greater than or equal to 1 mgd,
  - 2. Is required to have a pretreatment program (or has one in place), or
  - 3. Is otherwise required by the permitting authority to provide the information.
- E. **Toxicity Testing Data.** A treatment works that meets one or more of the following criteria must complete Part E (Toxicity Testing Data):
  - 1. Has a design flow rate greater than or equal to 1 mgd,
  - 2. Is required to have a pretreatment program (or has one in place), or
  - 3. Is otherwise required by the permitting authority to submit results of toxicity testing.
- F. **Industrial User Discharges and RCRA/CERCLA Wastes.** A treatment works that accepts process wastewater from any significant industrial users (SIUs) or receives RCRA or CERCLA wastes must complete Part F (Industrial User Discharges and RCRA/CERCLA Wastes). SIUs are defined as:
  - 1. All industrial users subject to Categorical Pretreatment Standards under 40 Code of Federal Regulations (CFR) 403.6 and 40 CFR Chapter I, Subchapter N (see instructions); and
  - 2. Any other industrial user that:
    - a. Discharges an average of 25,000 gallons per day or more of process wastewater to the treatment works (with certain exclusions); or
    - b. Contributes a process wastestream that makes up 5 percent or more of the average dry weather hydraulic or organic capacity of the treatment plant; or
    - c. Is designated as an SIU by the control authority.
- G. **Combined Sewer Systems.** A treatment works that has a combined sewer system must complete Part G (Combined Sewer Systems).

**ALL APPLICANTS MUST COMPLETE PART C (CERTIFICATION)**

## FACILITY NAME AND PERMIT NUMBER:

Lower Jackson River Regional WWTP - VA0090671

Form Approved 1/14/99  
OMB Number 2040-0086

## BASIC APPLICATION INFORMATION

## PART A. BASIC APPLICATION INFORMATION FOR ALL APPLICANTS:

All treatment works must complete questions A.1 through A.8 of this Basic Application Information packet.

## A.1. Facility Information.

Facility name Lower Jackson River Regional WWTP

Mailing Address 9212 Winterberry Avenue  
Covington, Virginia 24426

Contact person Mr. Gary Hepler

Title Assistant Director, Public Works

Telephone number (540) 863-6650

Facility Address 50 Fork Farm Road  
(not P.O. Box) Eagle Rock, VA 24085

## A.2. Applicant Information. If the applicant is different from the above, provide the following:

Applicant name Environmental Systems Service, LTD.

Mailing Address 50 Fork Farm Road  
Eagle Rock, Virginia 24085

Contact person Brian White

Title Plant Manager

Telephone number (540) 862-5138

Is the applicant the owner or operator (or both) of the treatment works?

☐ owner ☒ operator

Indicate whether correspondence regarding this permit should be directed to the facility or the applicant.

☒ facility ☒ applicant

## A.3. Existing Environmental Permits. Provide the permit number of any existing environmental permits that have been issued to the treatment works (include state-issued permits).

NPDES VA0090671 PSD \_\_\_\_\_

UIC \_\_\_\_\_ Other \_\_\_\_\_

RCRA \_\_\_\_\_ Other \_\_\_\_\_

## A.4. Collection System Information. Provide information on municipalities and areas served by the facility. Provide the name and population of each entity and, if known, provide information on the type of collection system (combined vs. separate) and its ownership (municipal, private, etc.).

Name	Population Served	Type of Collection System	Ownership
<u>Clifton Forge</u>	<u>4200</u>	<u>Seperate</u>	<u>Municipal</u>
<u>Selma</u>	<u>485</u>	<u>Seperate</u>	<u>Municipal</u>
<u>Iron Gate/Wesgate</u>	<u>700</u>	<u>seperate</u>	<u>Municipal</u>
Total population served <u>5385</u>			

**A.5. Indian Country.**

- a. Is the treatment works located in Indian Country?

☐ Yes ☒ No

- b. Does the treatment works discharge to a receiving water that is either in Indian Country or that is upstream from (and eventually flows through) Indian Country?

☐ Yes ☒ No

**A.6. Flow.** Indicate the design flow rate of the treatment plant (i.e., the wastewater flow rate that the plant was built to handle). Also provide the average daily flow rate and maximum daily flow rate for each of the last three years. Each year's data must be based on a 12-month time period with the 12th month of "this year" occurring no more than three months prior to this application submittal.

- a. Design flow rate 2.6 mgd

	<u>Two Years Ago</u>	<u>Last Year</u>	<u>This Year</u>
b. Annual average daily flow rate	<u>1.060</u>	<u>0.903</u>	<u>1.010</u> mgd
c. Maximum daily flow rate	<u>4.875</u>	<u>3.440</u>	<u>4.772</u> mgd

**A.7. Collection System.** Indicate the type(s) of collection system(s) used by the treatment plant. Check all that apply. Also estimate the percent contribution (by miles) of each.

☒ Separate sanitary sewer 100 %  
☐ Combined storm and sanitary sewer \_\_\_\_\_ %

**A.8. Discharges and Other Disposal Methods.**

- a. Does the treatment works discharge effluent to waters of the U.S.? ☒ Yes ☐ No

If yes, list how many of each of the following types of discharge points the treatment works uses:

i. Discharges of treated effluent 1  
ii. Discharges of untreated or partially treated effluent \_\_\_\_\_  
iii. Combined sewer overflow points \_\_\_\_\_  
iv. Constructed emergency overflows (prior to the headworks) \_\_\_\_\_  
v. Other \_\_\_\_\_

- b. Does the treatment works discharge effluent to basins, ponds, or other surface impoundments that do not have outlets for discharge to waters of the U.S.? ☐ Yes ☒ No

If yes, provide the following for each surface impoundment:

Location: \_\_\_\_\_

Annual average daily volume discharged to surface impoundment(s) \_\_\_\_\_ mgd

Is discharge \_\_\_\_\_ continuous or \_\_\_\_\_ intermittent?

- c. Does the treatment works land-apply treated wastewater? ☐ Yes ☒ No

If yes, provide the following for each land application site:

Location: \_\_\_\_\_

Number of acres: \_\_\_\_\_

Annual average daily volume applied to site: \_\_\_\_\_ Mgd

Is land application \_\_\_\_\_ continuous or \_\_\_\_\_ intermittent?

- d. Does the treatment works discharge or transport treated or untreated wastewater to another treatment works? ☐ Yes ☒ No

**FACILITY NAME AND PERMIT NUMBER:**

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If yes, describe the mean(s) by which the wastewater from the treatment works is discharged or transported to the other treatment works (e.g., tank truck, pipe).

If transport is by a party other than the applicant, provide:

Transporter name: \_\_\_\_\_

Mailing Address: \_\_\_\_\_  
\_\_\_\_\_

Contact person: \_\_\_\_\_

Title: \_\_\_\_\_

Telephone number: \_\_\_\_\_

For each treatment works that receives this discharge, provide the following:

Name: \_\_\_\_\_

Mailing Address: \_\_\_\_\_  
\_\_\_\_\_

Contact person: \_\_\_\_\_

Title: \_\_\_\_\_

Telephone number: \_\_\_\_\_

If known, provide the NPDES permit number of the treatment works that receives this discharge. \_\_\_\_\_

Provide the average daily flow rate from the treatment works into the receiving facility. \_\_\_\_\_

mgd

- e. Does the treatment works discharge or dispose of its wastewater in a manner not included in A.8.a through A.8.d above (e.g., underground percolation, well injection)?

\_\_\_\_\_ Yes

\_\_\_\_\_ ☒ No

If yes, provide the following for each disposal method:

Description of method (including location and size of site(s) if applicable):

Annual daily volume disposed of by this method: \_\_\_\_\_

Is disposal through this method \_\_\_\_\_ continuous or \_\_\_\_\_ intermittent?

## Lower Jackson River Regional WWTP - VA0090671

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**If you answered "yes" to question A.8.a, complete questions A.9 through A.12 once for each outfall (including bypass points) through which effluent is discharged. Do not include information on combined sewer overflows in this section. If you answered "no" to question A.8.a, go to Part B, "Additional Application Information for Applicants with a Design Flow Greater than or Equal to 0.1 mgd."**

a. Outfall number .001

b. Location	Iron Gate	24448
	(City or town, if applicable)	(Zip Code)
	Allegheny	Virginia
	(County)	(State)
	37 deg. 47 min. 32 sec.	79 deg. 47 min. 4 sec.
	(Latitude)	(Longitude)

c. Distance from shore (if applicable)	N/A ft.
--	---------

d. Depth below surface (if applicable)	N/A	ft.
--	-----	-----

e. Average daily flow rate	1.0 mod
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f. Does this outfall have either an intermittent or a periodic discharge? Yes ☒ No (go to A.9.a.)

If yes, provide the following information:

Number of times per year discharge occurs:

Average duration of each discharge:

Average flow per discharge: \_\_\_\_\_ mag

Months in which discharge occurs:

g. Is outfall equipped with a diffuser?	Yes	<input checked="" type="checkbox"/>	No
---	-----	-------------------------------------	----

a. Name of receiving water Jackson River

b. Name of watershed (if known)	unknown
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United States Soil Conservation Service 14-digit watershed code (if known): unknown

c. Name of State Management/River Basin (if known): Upper James River

United States Geological Survey 8-digit hydrologic cataloging unit code (if known): 02080201

d. Critical low flow of receiving stream (if applicable):

acute      N/A      cfs                      chronic      N/A      cfs

e. Total hardness of receiving stream at critical low flow (if applicable): N/A mg/l of CaCO<sub>3</sub>

**FACILITY NAME AND PERMIT NUMBER:**  
Lower Jackson River Regional WWTP - VA0090671

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**A.11. Description of Treatment.**

a. What levels of treatment are provided? Check all that apply.

☐ Primary ☒ Secondary  
☒ Advanced ☐ Other. Describe: \_\_\_\_\_

b. Indicate the following removal rates (as applicable):

Design BOD<sub>5</sub> removal or Design CBOD<sub>5</sub> removal 85 %  
Design SS removal 85 %  
Design P removal 93 %  
Design N removal 69 %  
Other \_\_\_\_\_ %

c. What type of disinfection is used for the effluent from this outfall? If disinfection varies by season, please describe.

Ultraviolet disinfection

If disinfection is by chlorination, is dechlorination used for this outfall?

☐ Yes ☐ No

d. Does the treatment plant have post aeration?

☒ Yes ☐ No

**A.12. Effluent Testing Information.** All Applicants that discharge to waters of the US must provide effluent testing data for the following parameters. Provide the indicated effluent testing required by the permitting authority for each outfall through which effluent is discharged. Do not include information on combined sewer overflows in this section. All information reported must be based on data collected through analysis conducted using 40 CFR Part 136 methods. In addition, this data must comply with QA/QC requirements of 40 CFR Part 136 and other appropriate QA/QC requirements for standard methods for analytes not addressed by 40 CFR Part 136. At a minimum, effluent testing data must be based on at least three samples and must be no more than four and one-half years apart.

Outfall number: .001

PARAMETER	MAXIMUM DAILY VALUE		AVERAGE DAILY VALUE		
	Value	Units	Value	Units	Number of Samples
pH (Minimum)	6.8	s.u.			
pH (Maximum)	8.2	s.u.			
Flow Rate	4.772	MGD	1.01	MGD	365
Temperature (Winter)	11.4	C	13.5	C	89
Temperature (Summer)	24.4	C	22.6	C	91

\* For pH please report a minimum and a maximum daily value

POLLUTANT	MAXIMUM DAILY DISCHARGE		AVERAGE DAILY DISCHARGE			ANALYTICAL METHOD	ML / MDL
	Conc.	Units	Conc.	Units	Number of Samples		

**CONVENTIONAL AND NONCONVENTIONAL COMPOUNDS.**

BIOCHEMICAL OXYGEN DEMAND (Report one)	BOD-5	5.1	mg/L	<QL	mg/L	365	SM 5210-A	2 mg/L
	CBOD-5							
FECAL COLIFORM		50.6	MPN	<QL	MPN	365	Colilert MPN	1 MPN
TOTAL SUSPENDED SOLIDS (TSS)		3.3	mg/L	<QL	mg/L	365	SM 2540-D	1.00 mg/L

**END OF PART A.**  
**REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM 2A YOU MUST COMPLETE**

DeLORME

XMap® 7

**Lower Jackson Regional WWTP**  
**50 Fork Farm Road, Eagle Rock VA**  
**VPDES Permit No VA0090671**



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MN (8 7° W)



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Data Zoom 13-0

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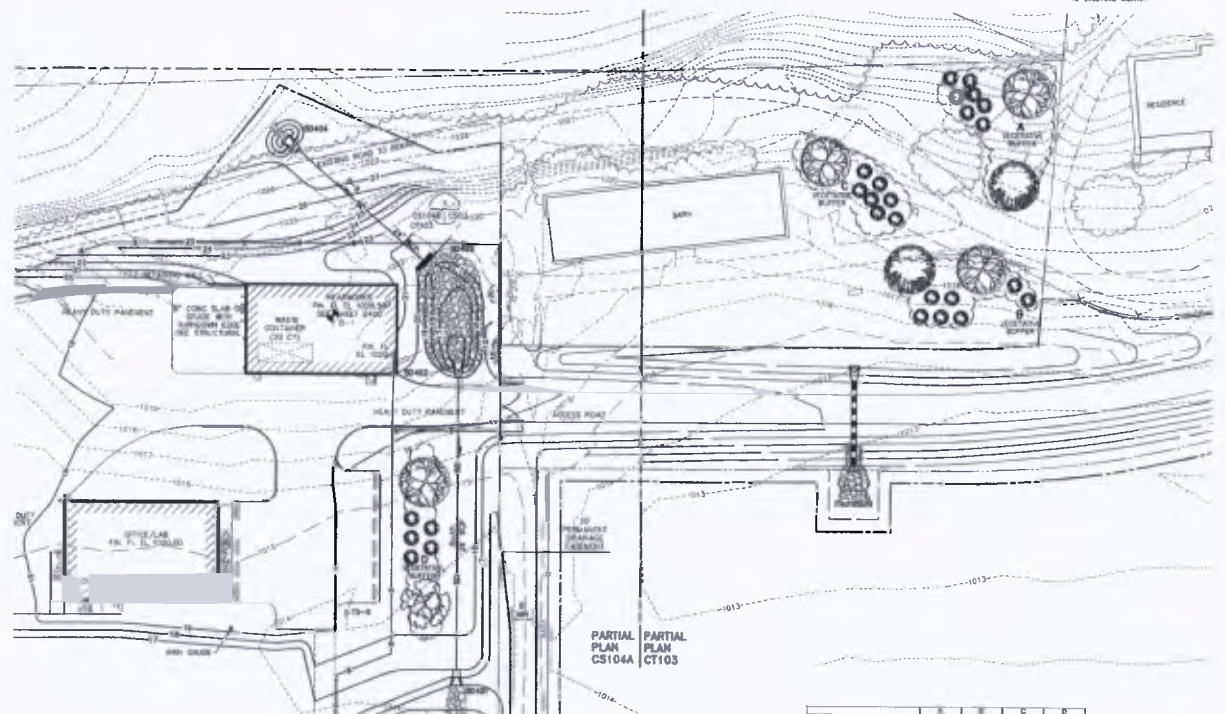
## ALLEGANY COUNTY, VIRGINIA

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1315 FRANKLIN ROAD  
ROANOKE, VA 24015  
(540) 857-3100 [www.hsmm.com](http://www.hsmm.com)





31/03/08	CONFERENCE DOCUMENTS	AW	CONF NO: 001008
	INCLUDES AGENDA		ISSUE DATE: JUNE 25, 2008
	NO. 1 THROUGH NO. 5		DESIGNED BY: ACT
			DRAWN BY: MSR
			CHECKED BY: EPS/718
			SUBMITTED BY: AW
03/02/12	RECORD DRAWINGS	AW	
	DATE: 03/02/12		BY: MRS. SEAY, WATKINS & MATHIAS
			NOV. 2009, 44. NORTH RESERVE

CS104A

1. SEE SH 0001 FOR SITE WORK LEGEND.
2. SEE SH 05103A FOR STRUCTURE SCHEDULE COORDINATE TABLE.
3. ADD 1000 FEET TO FINISH CONTOUR AND FINISH SPOT ELEVATION VALUES TO CORRELATE TO EXISTING SURVEY



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AREA		C	D
STREET & REQUIREMENTS		12	6
	Leyland cypress	11	5
	Vigiera Rue oak		505
	Red maple	1	1
	Signal Hill oak		
STREET & PROVIDER		13	6

1 THE SITE IS LOCATED WITHIN THE APPALACHIAN PHYSIOGRAPHIC REGION AND USDA PLANT HARDINESS ZONE 6.

2 THE TREES SELECTED FOR THE BUFFER ARE SUITED FOR THE "UPLAND SLOPES" ZONE WHICH IS ALSO REFERRED TO AS "ZONE 6" IN THE CORN STORMWATER MANAGEMENT (CSM) HANDBOOK.

3 THE TYPE OF BUFFER CONSTRUCTED IN THE SCHEDULE IS APPROPRIATE 800-1000 PLANTINGS PER ACRE AND HAS CALCULATED AS FOLLOWS:

4  $(\text{STRESS} = (7 \text{ TREES/SP}) \times (1000 \text{ SP}))$  AND ROUNDED UP TO THE NEXT WHOLE NUMBER.

5 THE TREES SHALL CONSIDER UP:

- 1. Layland cypress (*X Cupressocypres laylandii*)
- 2. Virginia the oak (*Quercus virginiana*)
- 3. Acacia rubra (*Radi media*)
- 4. Corya glabra (*Myrtal* Hickory)

### VEGETATED BUFFER SCHEDULE

### GRAPHIC SCALES

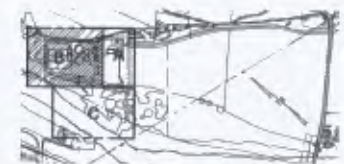
- 1 SEE SH 0001 FOR SITE WORK LEGEND.
- 2 SEE SH CS-03A FOR STRUCTURE SCHEDULE  
COORDINATE TABLE.
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SEE "RECORD DOCUMENTS" STAMP\* ON SHEET C4 FOR  
ADDITIONAL CONDITIONS OF USE.

DATE 03/02/12

**GRAPHIC SCALES**



SITE - AREA B  
GRADING AND DRAINAGE PLAN

CS104B

LOWER JACKSON RIVER  
REGIONAL WASTEWATER  
TREATMENT PLANT

ALLEGANY COUNTY, VIRGINIA

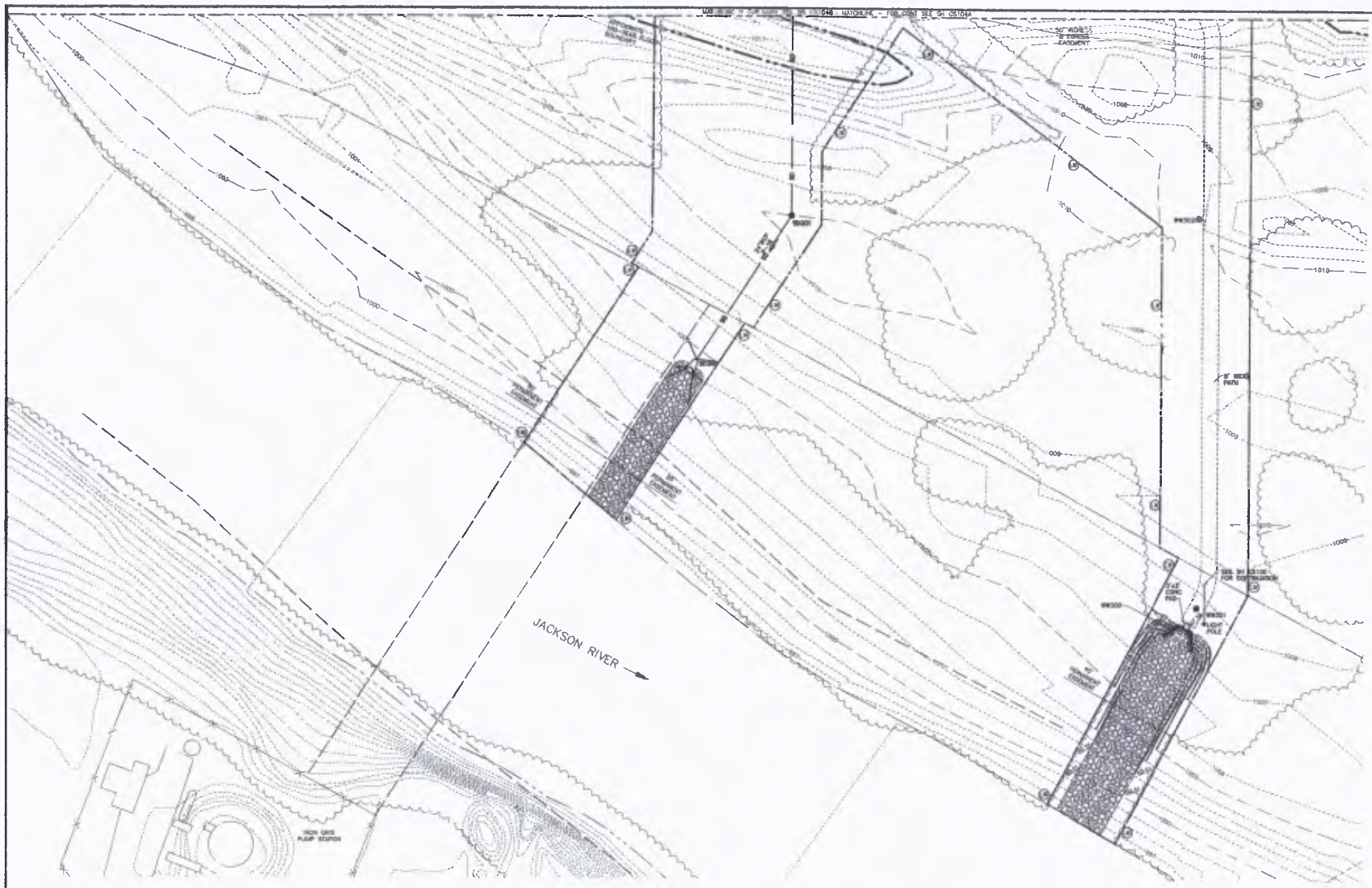
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11/03/08	CONFORMANCE DOCUMENTS	JAM	COAR# NO: 001886
			ISSUE DATE: JUNE 25, 2008
			DESIGNED BY: ACY
			DRAWN BY: MDR
			CHECKED BY: EMB/PA
			SUBMITTED BY: JAM
03/02/12	RECORD DRAWINGS	JAM	© NAYES, SEAY, MATTHEW & MATTHEW INC. 2008 ALL RIGHTS RESERVED

CADD:\CADD\RECORDS\JAMES\03-22-2012\12\13\23\01\248.DWG 801581 04/13/2012 11:44:57 KAD-S. RUSSELL  
 R7: g:\cadd\records\james\03-22-2012\12\13\23\01\248.DWG 801581 04/13/2012 11:44:57 KAD-S. RUSSELL

Form 2A Item B.2



- NOTES THIS SHEET:**
1. SEE SH C001 FOR SITE WORK LEGEND.
  2. SEE SH C010A FOR STRUCTURE SCHEDULE COORDINATE TABLE.
  3. ADD 1000 FEET TO FINISH CONTOUR AND FRESH SPOT ELEVATION VALUES TO CORRELATE TO EXISTING SURVEY.

**RECORD DOCUMENTS**

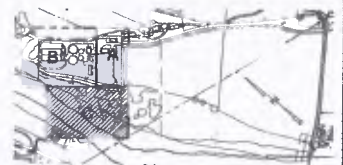
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**AECOM**

DATE: 03/02/12 BY: JAM

**GRAPHIC SCALES**

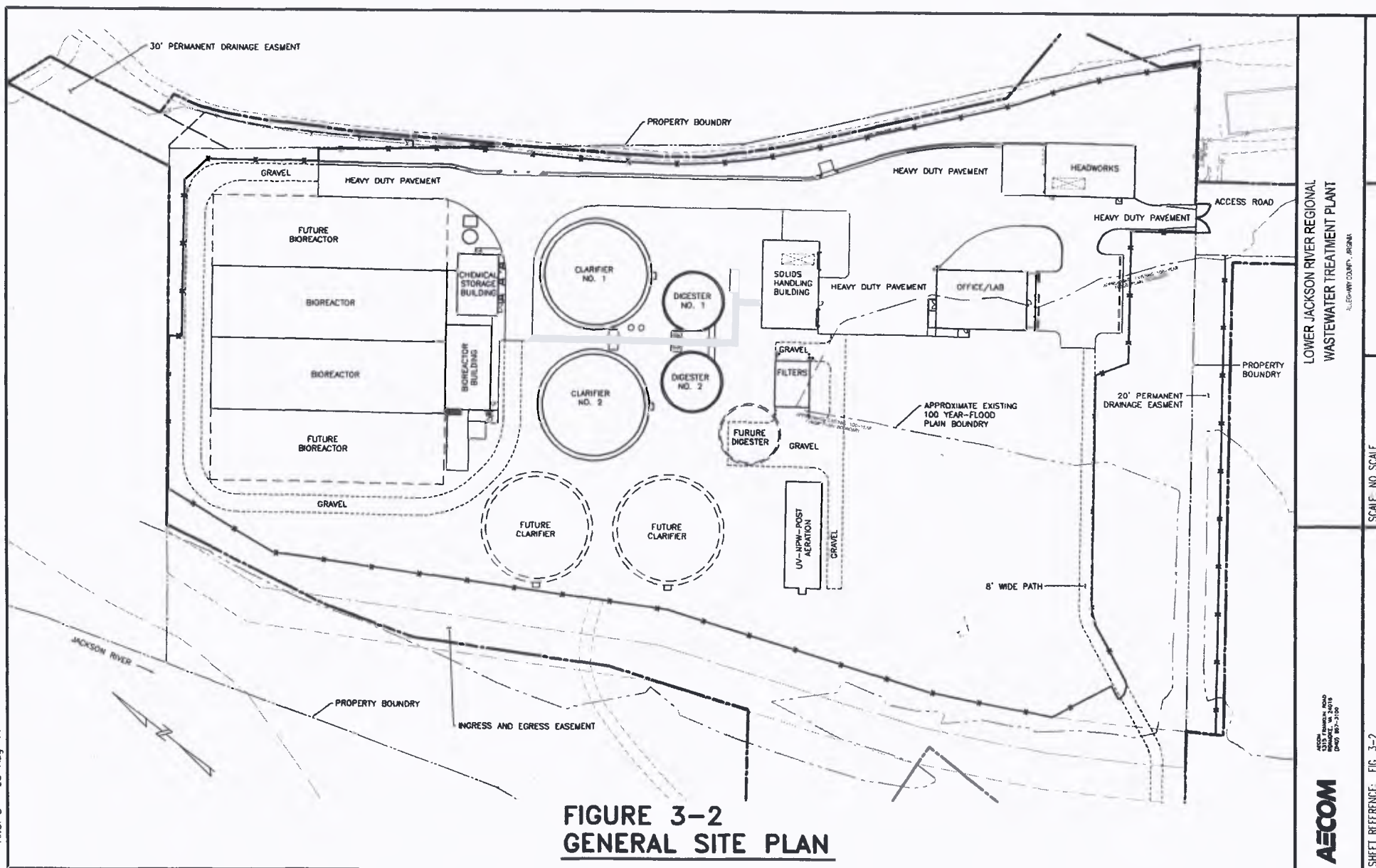
1"=20' 20' 10'



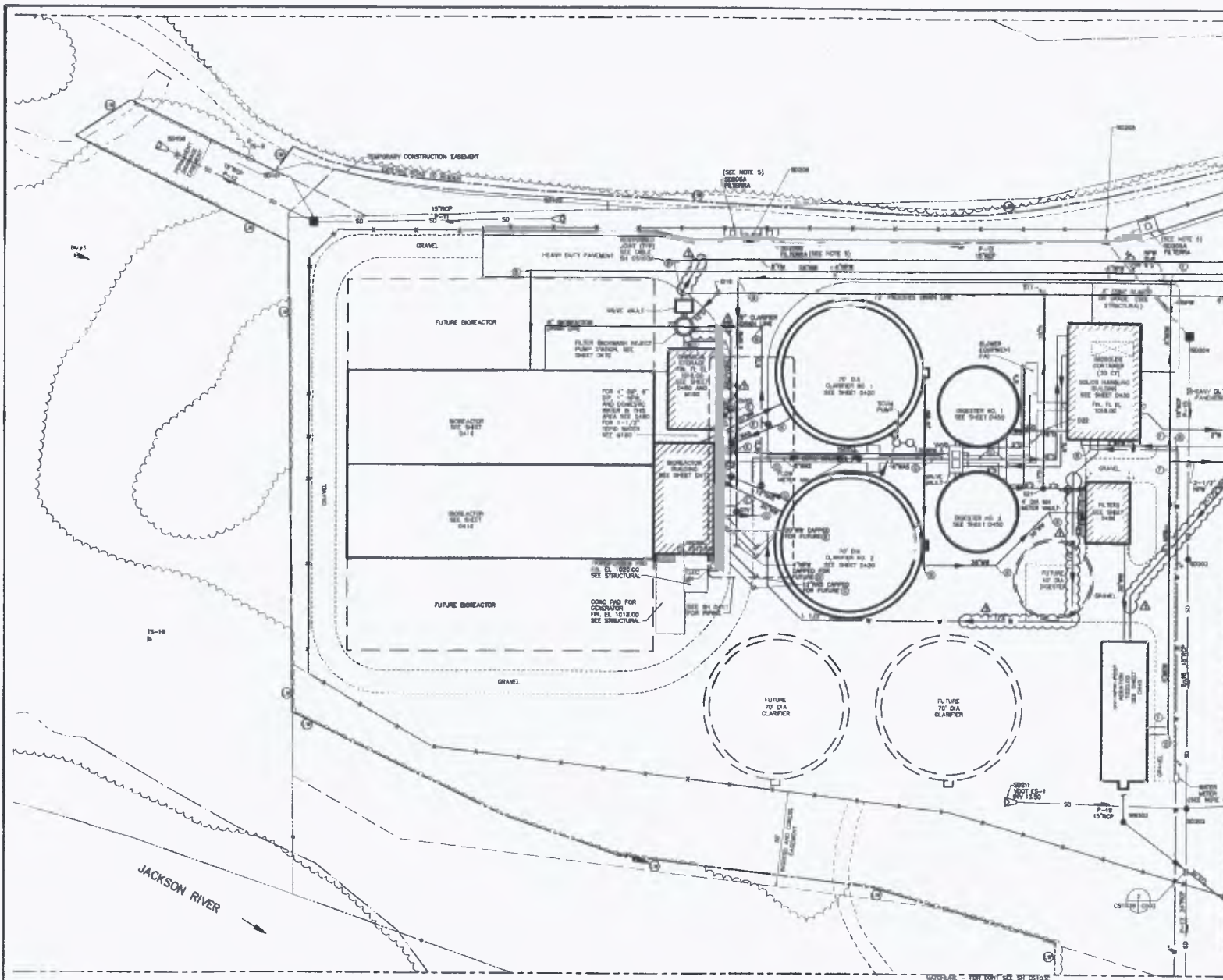
**KEYPLAN**

DESIGNER	CONSULTANT	CONSULTANT	<b>LOWER JACKSON RIVER REGIONAL WASTEWATER TREATMENT PLANT</b>  ALLEGANY COUNTY, VIRGINIA	<b>HSMM   AECOM</b>  HAYES, SEAT, WATERN & WATERN, INC. 1315 TOWNCLAY ROAD ROWAN, VA 24076 (540) 857-3100 www.hsamm.com	11/03/09 CORRESPONDENCE DOCUMENTS INCLUDES ADDENDUM NO. 1 THROUGH NO. 5 DESIGNED BY: JCP CHECKED BY: JAM SUBMITTED BY: JAM	C001 NO. 00188 ISSUE DATE: JUNE 28, 2008 DESIGNED BY: JCP CHECKED BY: JAM SUBMITTED BY: JAM	CML SITE - AREA C GRADING AND DRAINAGE PLAN	<b>CS104C</b>
					03/02/12 RECORD DRAINAGE REV. DATE DESCRIPTION APP.	© HAYES, SEAT, WATERN & WATERN, INC. MAY, 2008. ALL RIGHTS RESERVED.		

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**NOTES THIS SHEET:**

- 1 SEE SM 0001 FOR SITE WORK LEGEND.
- 2 SEE SM CS103A FOR STRUCTURE SCHEDULE  
COORDINATE TABLE.
- 3 SEE SM CS103A FOR RESTRAINED JOINT TABLE.
- 4 REFER TO SPECIFICATION SECTION 33 11 10  
FOR WATER WATER INFORMATION.

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## RECORD DOCUMENTS

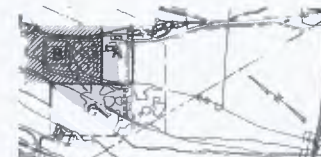
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**AECOM**

DATE 03/02/12

## GRAPHIC SCALES



KEYPLAN

LOWER JACKSON RIVER  
REGIONAL WASTEWATER  
TREATMENT PLANT

ALLEGANY COUNTY, VIRGINIA

HSMM	AECOM
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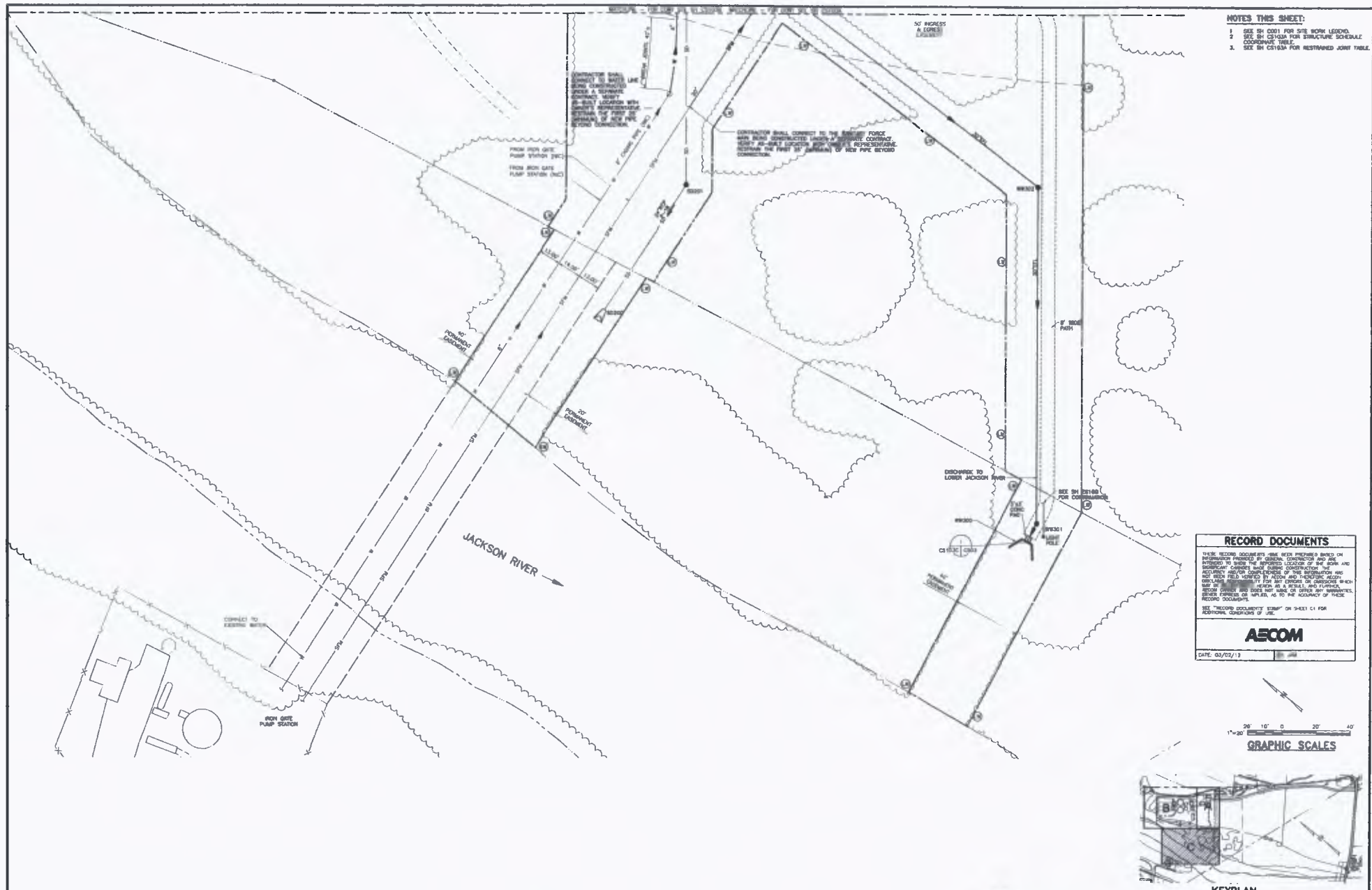
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	11/03/08	CONFERENCE DOCUMENTS INCLUDES AGENDA NO. 1 THROUGH NO. 8	CONF ID: 00186 ISSUE DATE: JUNE 25, 2008 DESIGNED BY: ACF DRAWN BY: MOR CHECKED BY: UPB/PM SUBMITTED BY: JAM
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ACV	DATE	DESCRIPTION	© JAMES, SCAY, MATTHEW & MATTHEW INC. 2008 ALL RIGHTS RESERVE.

CIVIL

SITE - AREA B  
SITE PIPING PLAN

CS103B



NOTES THIS SHEET:

1. SEE SH 0001 FOR SITE WORK LEGEND.
2. SEE SH CS103A FOR STRUCTURE SCHEDULE COORDINATE TABLE.
3. SEE SH CS103A FOR RESTRAINED JOINT TABLE.

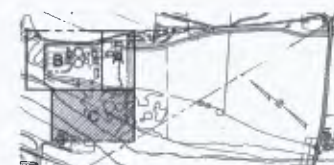
## RECORD DOCUMENTS

THESE RECORD DOCUMENTS HAVE BEEN PREPARED BASED ON INFORMATION PROVIDED BY GENERAL CONTRACTOR AND ARE INTENDED TO SHOW THE REPORTED LOCATION OF THE SIGN AND THE LOCATION OF THE SIGN. THE INFORMATION IS NOT GUARANTEED TO BE ACCURATE AND/OR COMPLETENESS OF THE INFORMATION HAS NOT BEEN FIELD VERIFIED BY ALCON AND THEREFORE ALCON DISCLAIMS RESPONSIBILITY FOR ANY ERRORS OR OMISSIONS WHICH MAY BE MADE HEREIN AS A RESULT, AND FURTHER, ALCON EXPRESSLY DOES NOT MAKE OR OFFER ANY WARRANTIES, EITHER EXPRESS OR IMPLIED, AS TO THE ACCURACY OF THESE RECORD DOCUMENTS.



DATE: 03/02/12

The image shows a line segment with a point in the middle, and a graphic scale below it. The scale is marked with 10', 0, 10', 20', and 40'. Below the scale, the text "GRAPHIC SCALES" is written in bold, capital letters.



### KEYPLAN

**LOWER JACKSON RIVER  
REGIONAL WASTEWATER  
TREATMENT PLANT**

ALLEGANY COUNTY, VIRGINIA

HSMM | AECOM

HAYES SEAY, MATTERN & MATTERN, INC.  
1315 FRANKLIN ROAD  
ROANOKE, VA 24018  
(540) 857-3100 [www.hseay.com](http://www.hseay.com)

11/03/08	CONFIRMANCE DOCUMENTS	COMB NO: 801881
		ISSUE DATE: JUNE 28, 2009
		DESIGNED BY: ACF
		DRAWN BY: MDR
		CHECKED BY: EPM/PM
		SUBMITTED BY: JAM
03/02/12	RECORD DIMENSIONS	© HATES, SEAY, WATTERS & MATT

CML

SITE -- AREA C  
SITE PIPING PLAN

CS103C

## FACILITY NAME AND PERMIT NUMBER:

Form Approved 1/14/99  
OMB Number 2040-0086

Lower Jackson River Regional WWTP - VA0090671

## BASIC APPLICATION INFORMATION

## PART B. ADDITIONAL APPLICATION INFORMATION FOR APPLICANTS WITH A DESIGN FLOW GREATER THAN OR EQUAL TO 0.1 MGD (100,000 gallons per day).

All applicants with a design flow rate  $\geq 0.1$  mgd must answer questions B.1 through B.6. All others go to Part C (Certification).**B.1. Inflow and Infiltration.** Estimate the average number of gallons per day that flow into the treatment works from inflow and/or infiltration.300,000 gpd

Briefly explain any steps underway or planned to minimize inflow and infiltration.

Public works continues to efforts to decrease I&I throughout the collection system.**B.2. Topographic Map.** Attach to this application a topographic map of the area extending at least one mile beyond facility property boundaries. This map must show the outline of the facility and the following information. (You may submit more than one map if one map does not show the entire area.)

- The area surrounding the treatment plant, including all unit processes.
- The major pipes or other structures through which wastewater enters the treatment works and the pipes or other structures through which treated wastewater is discharged from the treatment plant. Include outfalls from bypass piping, if applicable.
- Each well where wastewater from the treatment plant is injected underground.
- Wells, springs, other surface water bodies, and drinking water wells that are: 1) within 1/4 mile of the property boundaries of the treatment works, and 2) listed in public record or otherwise known to the applicant.
- Any areas where the sewage sludge produced by the treatment works is stored, treated, or disposed.
- If the treatment works receives waste that is classified as hazardous under the Resource Conservation and Recovery Act (RCRA) by truck, rail, or special pipe, show on the map where that hazardous waste enters the treatment works and where it is treated, stored, and/or disposed.

**B.3. Process Flow Diagram or Schematic.** Provide a diagram showing the processes of the treatment plant, including all bypass piping and all backup power sources or redundancy in the system. Also provide a water balance showing all treatment units, including disinfection (e.g., chlorination and dechlorination). The water balance must show daily average flow rates at influent and discharge points and approximate daily flow rates between treatment units. Include a brief narrative description of the diagram.**B.4. Operation/Maintenance Performed by Contractor(s).**Are any operational or maintenance aspects (related to wastewater treatment and effluent quality) of the treatment works the responsibility of a contractor? ☒ Yes ☐ No

If yes, list the name, address, telephone number, and status of each contractor and describe the contractor's responsibilities (attach additional pages if necessary).

Name: Environmental Systems Service, Ltd.Mailing Address: P. O. Box 520 Culpeper, VA 22701Telephone Number: (540) 825-6660Responsibilities of Contractor: Operation and maintenance of the treatment plant and associated pump stations.**B.5. Scheduled Improvements and Schedules of Implementation.** Provide information on any uncompleted implementation schedule or uncompleted plans for improvements that will affect the wastewater treatment, effluent quality, or design capacity of the treatment works. If the treatment works has several different implementation schedules or is planning several improvements, submit separate responses to question B.5 for each. (If none, go to question B.6.)

- List the outfall number (assigned in question A.9) for each outfall that is covered by this implementation schedule.
- Indicate whether the planned improvements or implementation schedule are required by local, State, or Federal agencies.  
☐ Yes ☐ No

## FACILITY NAME AND PERMIT NUMBER:

Lower Jackson River Regional WWTP - VA0090671

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- c If the answer to B.5.b is "Yes," briefly describe, including new maximum daily inflow rate (if applicable).

- d. Provide dates imposed by any compliance schedule or any actual dates of completion for the implementation steps listed below, as applicable. For improvements planned independently of local, State, or Federal agencies, indicate planned or actual completion dates, as applicable. Indicate dates as accurately as possible.

Implementation Stage	Schedule MM / DD / YYYY	Actual Completion MM / DD / YYYY
- Begin construction	___/___/___	___/___/___
- End construction	___/___/___	___/___/___
- Begin discharge	___/___/___	___/___/___
- Attain operational level	___/___/___	___/___/___

- e. Have appropriate permits/clearances concerning other Federal/State requirements been obtained? ☐ Yes ☐ No

Describe briefly: \_\_\_\_\_  
\_\_\_\_\_

**B.6. EFFLUENT TESTING DATA (GREATER THAN 0.1 MGD ONLY).**

Applicants that discharge to waters of the US must provide effluent testing data for the following parameters. Provide the indicated effluent testing required by the permitting authority for each outfall through which effluent is discharged. Do not include information on combined sewer overflows in this section. All information reported must be based on data collected through analysis conducted using 40 CFR Part 136 methods. In addition, this data must comply with QA/QC requirements of 40 CFR Part 136 and other appropriate QA/QC requirements for standard methods for analytes not addressed by 40 CFR Part 136. At a minimum, effluent testing data must be based on at least three pollutant scans and must be no more than four and one-half years old.

Outfall Number: \_\_\_\_\_

POLLUTANT	MAXIMUM DAILY DISCHARGE		AVERAGE DAILY DISCHARGE			ANALYTICAL METHOD	ML / MDL
	Conc.	Units	Conc.	Units	Number of Samples		
CONVENTIONAL AND NONCONVENTIONAL COMPOUNDS.							
AMMONIA (as N)	<QL	mg/L	<QL	mg/L	3	EPA350.1Rev2	0.10 mg/L
CHLORINE (TOTAL RESIDUAL, TRC)	N/A		N/A				
DISSOLVED OXYGEN	15.7	mg/L	11.3	mg/L	365	SM4500-O	0.2 mg/L
TOTAL KJELDAHL NITROGEN (TKN)	1.56	mg/L	0.13	mg/L	52	SM4110B 2000	0.5 mg/L
NITRATE PLUS NITRITE NITROGEN	11.0	mg/L	4.8	mg/L	52	SM4110B 2000	0.5 mg/L
OIL and GREASE	7.8	mg/L	2.6	mg/L	3	EPA1664A	5.0 mg/L
PHOSPHORUS (Total)	0.35	mg/L	0.10	mg/L	52	SM4500PBE1999	0.05 mg/L
TOTAL DISSOLVED SOLIDS (TDS)	234	mg/L	230	mg/L	3	SM2540-C 1997	1.00 mg/L
OTHER							

**END OF PART B.**

**REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM 2A YOU MUST COMPLETE**

**FACILITY NAME AND PERMIT NUMBER:**

Lower Jackson River Regional WWTP - VA0090671

Form Approved 1/14/99  
OMB Number 2040-0086**BASIC APPLICATION INFORMATION****PART C. CERTIFICATION**

All applicants must complete the Certification Section. Refer to instructions to determine who is an officer for the purposes of this certification. All applicants must complete all applicable sections of Form 2A, as explained in the Application Overview. Indicate below which parts of Form 2A you have completed and are submitting. By signing this certification statement, applicants confirm that they have reviewed Form 2A and have completed all sections that apply to the facility for which this application is submitted.

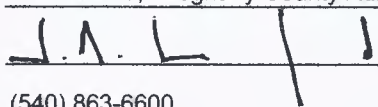
**Indicate which parts of Form 2A you have completed and are submitting:**

- |  |   |
|--|---|
| <input checked="" type="checkbox"/> Basic Application Information packet | Supplemental Application Information packet:  |
|  | <input checked="" type="checkbox"/> Part D (Expanded Effluent Testing Data)         |
|  | <input checked="" type="checkbox"/> Part E (Toxicity Testing: Biomonitoring Data)   |
|  | <input type="checkbox"/> Part F (Industrial User Discharges and RCRA/CERCLA Wastes) |
|  | <input type="checkbox"/> Part G (Combined Sewer Systems)                            |

**ALL APPLICANTS MUST COMPLETE THE FOLLOWING CERTIFICATION.**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name and official title Jon Lanford, Alleghany County Administrator

Signature 

Telephone number (540) 863-6600

Date signed 02 JUNE 2014

Upon request of the permitting authority, you must submit any other information necessary to assess wastewater treatment practices at the treatment works or identify appropriate permitting requirements.

**SEND COMPLETED FORMS TO:**

## Lower Jackson River Regional WWTP

### Form 2A Item B.3 – Process Narrative

The Lower Jackson River Regional WWTP is 2.6 MGD wastewater treatment facility which includes Pretreatment, biological and chemical removal, filtration, ultra-violet disinfection, post aeration and sludge management processes.

Wastewater enters the treatment facility at the Headworks Building via a 20" force main from the Iron Gate Pump station. A traveling screen is utilized for screening debris from the wastewater. A manual bar screen is also provided. Grit removal is accomplished using a vortex grit removal system. From the Headworks Building wastewater is conveyed to the Aeration Basins via a 24" gravity pipeline.

The treatment facility is equipped with two Aeration Basins utilizing the Bardenpho Activated sludge process. Wastewater enters the first pre-anoxic zone where it is mixed with Return Activated Sludge from the clarifiers before entering the second pre-anoxic zone. In the second pre-anoxic zone flow is mixed with recycled flow from the end of the aeration tank before flowing into the third and fourth pre-anoxic zones. Nitrogen removal is accomplished in the pre-anoxic zones by converting nitrate and nitrite to oxygen and nitrogen gas, which escapes to the atmosphere.

Flow from the fourth pre-anoxic zone enters the aeration basin. In the aeration tank biological oxygen demand is reduced and ammonia is converted to nitrite and nitrate. The aeration tank is provided with an internal recirculation pump which recirculates up to 300% of the influent zone to the second pre-anoxic zone. From the end of the aeration basin flow enters four post-anoxic zones where additional nitrogen removal is accomplished. In the final post-anoxic zone aluminum sulfate is added prior to flowing to the clarifiers.

The facility is equipped with two centerflow clarifiers. In the clarifiers solids from the mixed liquor from the aeration tank are settled which is pumped back to first pre-anoxic basin tank and mixed with incoming wastewater from the headworks. Clear water overflows the clarifier weirs and flows to the tertiary filters.

The facility is equipped with two cloth media filters which further reduce any particulate matter in the wastewater from the clarifiers. The filters are equipped with filter back wash filters and sludge pumps. Material from the filter back wash is pumped to the filter back wash pump station and subsequently back to the headworks building. Sludge that accumulates in the bottom of the filter tanks is pumped to the aerobic digesters. The filters are equipped with continuous turbidity meters. Effluent from the filters then flows to the UV and NPW shed.

Filter effluent flows to the UV channel which is equipped with two banks of UV lights consisting of forty UV bulbs per bank. The UV system is equipped with an automatic cleaning system to insure the bulbs remain free of debris. From the UV channel, wastewater flows to the post aeration tanks and NPW tank.

The Post Aeration tank is equipped with two blowers and series of diffusers which aerates the wastewater to insure adequate dissolved oxygen content prior to discharge to the Jackson River. The aeration tanks have continuous pH and dissolve oxygen meters.

The NPW tank is equipped with three NPW pumps which supply all the hydrants, wash down equipment and HVAC water demands inside the plant.

Two aerobic digesters are provided. Waste activated sludge is pumped from the return sludge from the clarifiers. Three positive displacement pumps are used to aerate the digester sludge. Sludge from the digesters is pumped to a rotary fan press located in the Solids building.

Sludge from the digesters are pumped to the Rotary fan press which dewateres the sludge. Dewatered sludge is collected in to a hopper which is transported to Amelia Landfill for discposal.

## FACILITY NAME AND PERMIT NUMBER:

Lower Jackson River Regional WWTP - VA0090671

Form Approved 1/14/99  
OMB Number 2040-0086

## SUPPLEMENTAL APPLICATION INFORMATION

## PART D. EXPANDED EFFLUENT TESTING DATA

Refer to the directions on the cover page to determine whether this section applies to the treatment works.

**Effluent Testing: 1.0 mgd and Pretreatment Treatment Works.** If the treatment works has a design flow greater than or equal to 1.0 mgd or it has (or is required to have) a pretreatment program, or is otherwise required by the permitting authority to provide the data, then provide effluent testing data for the following pollutants. Provide the indicated effluent testing information and any other information required by the permitting authority for each outfall through which effluent is discharged. Do not include information on combined sewer overflows in this section. All information reported must be based on data collected through analyses conducted using 40 CFR Part 136 methods. In addition, these data must comply with QA/QC requirements of 40 CFR Part 136 and other appropriate QA/QC requirements for standard methods for analytes not addressed by 40 CFR Part 136. Indicate in the blank rows provided below any data you may have on pollutants not specifically listed in this form. At a minimum, effluent testing data must be based on at least three pollutant scans and must be no more than four and one-half years old.

Outfall number: .001 (Complete once for each outfall discharging effluent to waters of the United States.)

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/ MDL
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	Number of Samples		
<b>METALS (TOTAL RECOVERABLE), CYANIDE, PHENOLS, AND HARDNESS.</b>											
ANTIMONY	<.002	mg/l	0		<.002	mg/l	0		3	EPA 200.8	0.002
ARSENIC	<.003	mg/l	0		<.003	mg/l	0		3	EPA 200.8	0.003
BERYLLIUM	<.002	mg/l	0		<.002	mg/l	0		3	EPA 200.8	0.002
CADMIUM	<.005	mg/l	0		<.005	mg/l	0		3	EPA 200.8	0.005
CHROMIUM	<.005	mg/l	0		<.005	mg/l	0		3	EPA 200.8	0.005
COPPER	0.015	mg/l	.192	lb/dy	0.014	mg/l	0.113	lb/dy	3	EPA 200.8	0.005
LEAD	<.005	mg/l	0		<.005	mg/l	0		3	EPA 200.8	0.005
MERCURY	<.001	mg/l	0		<QL	mg/l	0		3	EPA 245.1	0.001
NICKEL	<.005	mg/l	0		<.005	mg/l	0		3	EPA 200.8	0.005
SELENIUM	<.005	mg/l	0		<.005	mg/l	0		3	EPA 200.8	0.005
SILVER	<.005	mg/l	0		<.005	mg/l	0		3	EPA 200.8	0.005
THALLIUM	<.002	mg/l	0		<.002	mg/l	0		3	EPA 200.8	0.002
ZINC	0.050	mg/l	0.417	lb/dy	0.035	mg/l	0.27	lb/dy	3	EPA 200.8	0.005
CYANIDE	<.005	mg/l	0		<.005	mg/l	0		3	EPA 335.4	0.005
TOTAL PHENOLIC COMPOUNDS	<0.02	mg/l	0		<0.02	mg/l	0		3	EPA 420.4	0.02
HARDNESS (AS CaCO <sub>3</sub> )	131	mg/l	1364	lb/dy	114	mg/l	895	lb/dy	3	SM 2340C	2
Use this space (or a separate sheet) to provide information on other metals requested by the permit writer.											

**FACILITY NAME AND PERMIT NUMBER:**  
Lower Jackson River Regional WWTP - VA0090671

Form Approved 1/14/99  
OMB Number 2040-0086

Outfall number: 1 (Complete once for each outfall discharging effluent to waters of the United States.)

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/ MDL
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	Number of Samples		
VOLATILE ORGANIC COMPOUNDS.											
ACROLEIN	<5	ug/l	0		<5	ug/l	0		3	EPA 624	5
ACRYLONITRILE	<50	ug/l	0		<50	ug/l	0		3	EPA 624	50
BENZENE	<5	ug/l	0		<5	ug/l	0		3	EPA 624	50
BROMOFORM	<5	ug/l	0		<5	ug/l	0		3	EPA 624	5 ug/l
CARBON TETRACHLORIDE	<5	ug/l	0		<5	ug/l	0		3	EPA 624	5 ug/l
CLOROBENZENE	<5	ug/l	0		<5	ug/l	0		3	EPA 624	5 ug/l
CHLORODIBROMO-METHANE	<5	ug/l	0		<5	ug/l	0		3	EPA 624	5 ug/l
CHLOROETHANE	<10	ug/l	0		<10	ug/l	0		3	EPA 624	10 ug/l
2-CHLORO-ETHYLVINYL ETHER	<5	ug/l	0		<5	ug/l	0		3	EPA 624	5 ug/l
CHLOROFORM	<5	ug/l	0		<5	ug/l	0		3	EPA 624	5 ug/l
DICHLOROBROMO-METHANE	<5	ug/l	0		<5	ug/l	0		3	EPA 624	5 ug/l
1,1-DICHLOROETHANE	<5	ug/l	0		<5	ug/l	0		3	EPA 624	5 ug/l
1,2-DICHLOROETHANE	<5	ug/l	0		<5	ug/l	0		3	EPA 624	5 ug/l
TRANS-1,2-DICHLORO-ETHYLENE	<5	ug/l	0		<5	ug/l	0		3	EPA 624	5 ug/l
1,1-DICHLOROETHYLENE	<5	ug/l	0		<5	ug/l	0		3	EPA 624	5 ug/l
1,2-DICHLOROPROPANE	<5	ug/l	0		<5	ug/l	0		3	EPA 624	5 ug/l
1,3-DICHLORO-PROPYLENE	<5	ug/l	0		<5	ug/l	0		3	EPA 624	5 ug/l
ETHYLBENZENE	<5	ug/l	0		<5	ug/l	0		3	EPA 624	5 ug/l
METHYL BROMIDE	<10	ug/l	0		<10	ug/l	0		3	EPA 624	10 ug/l
METHYL CHLORIDE	<10	ug/l	0		<10	ug/l	0		3	EPA 624	10 ug/l
METHYLENE CHLORIDE	<5	ug/l	0		<5	ug/l	0		3	EPA 624	5 ug/l
1,1,2,2-TETRACHLORO-ETHANE	<5	ug/l	0		<5	ug/l	0		3	EPA 624	5 ug/l
TETRACHLORO-ETHYLENE	<5	ug/l	0		<5	ug/l	0		3	EPA 624	5 ug/l
TOLUENE	6	ug/l	46.3	lb/dy	3	ug/l	23.1	lb/dy	3	EPA 624	5 ug/l

## FACILITY NAME AND PERMIT NUMBER:

Lower Jackson River Regional WWTP - VA0090671

Form Approved 1/14/99  
OMB Number 2040-0086Outfall number: 1 (Complete once for each outfall discharging effluent to waters of the United States.)

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/ MDL
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	Number of Samples		
1,1,1-TRICHLOROETHANE	<5	ug/l	0		<5	ug/l	0		3	EPA 624	5 ug/l
1,1,2-TRICHLOROETHANE	<5	ug/l	0		<5	ug/l	0		3	EPA 624	5 ug/l
TRICHLORETHYLENE	<5	ug/l	0		<5	ug/l	0		3	EPA 624	5 ug/l
VINYL CHLORIDE	<10	ug/l	0		<10	ug/l	0		3	EPA 624	10 ug/l

Use this space (or a separate sheet) to provide information on other volatile organic compounds requested by the permit writer.

## ACID-EXTRACTABLE COMPOUNDS

P-CHLORO-M-CRESOL	<20	ug/l	0		<20	ug/l	0		3	EPA 625	20 ug/l
2-CHLOROPHENOL	<10	ug/l	0		<10	ug/l	0		3	EPA 625	10 ug/l
2,4-DICHLOROPHENOL	<10	ug/l	0		<10	ug/l	0		3	EPA 625	10 ug/l
2,4-DIMETHYLPHENOL	<10	ug/l	0		<10	ug/l	0		3	EPA 625	10 ug/l
4,6-DINITRO-O-CRESOL	<50	ug/l	0		<50	ug/l	0		3	EPA 625	50 ug/l
2,4-DINITROPHENOL	<50	ug/l	0		<50	ug/l	0		3	EPA 625	50 ug/l
2-NITROPHENOL	<10	ug/l	0		<10	ug/l	0		3	EPA 625	10 ug/l
4-NITROPHENOL	<50	ug/l	0		<50	ug/l	0		3	EPA 625	50 ug/l
PENTACHLOROPHENOL	<50	ug/l	0		<50	ug/l	0		3	EPA 625	50 ug/l
PHENOL	<10	ug/l	0		<10	ug/l	0		3	EPA 625	10 ug/l
2,4,6-TRICHLOROPHENOL	<10	ug/l	0		<10	ug/l	0		3	EPA 625	10 ug/l

Use this space (or a separate sheet) to provide information on other acid-extractable compounds requested by the permit writer.

## BASE-NEUTRAL COMPOUNDS

ACENAPHTHENE	<10	ug/l	0		<10	ug/l	0		3	EPA 625	10 ug/l
ACENAPHTHYLENE	<10	ug/l	0		<10	ug/l	0		3	EPA 625	10 ug/l
ANTHRACENE	<10	ug/l	0		<10	ug/l	0		3	EPA 625	10 ug/l
BENZIDINE	<20	ug/l	0		<20	ug/l	0		3	EPA 625	20 ug/l
BENZO(A)ANTHRACENE	<10	ug/l	0		<10	ug/l	0		3	EPA 625	10 ug/l
BENZO(A)PYRENE	<10	ug/l	0		<10	ug/l	0		3	EPA 625	10 ug/l

**FACILITY NAME AND PERMIT NUMBER:**

Lower Jackson River Regional WWTP - VA0090671

 Form Approved 1/14/99  
 OMB Number 2040-0086

 Outfall number: 1 (Complete once for each outfall discharging effluent to waters of the United States.)

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/ MDL
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	Number of Samples		
3,4 BENZO-FLUORANTHENE	<10	ug/l	0		<10	ug/l	0		3	EPA 625	10 ug/l
BENZO(GHI)PERYLENE	<10	ug/l	0		<10	ug/l	0		3	EPA 625	10 ug/l
BENZO(K)FLUORANTHENE	<10	ug/l	0		<10	ug/l	0		3	EPA 625	10 ug/l
BIS (2-CHLOROETHOXY) METHANE	<10	ug/l	0		<10	ug/l	0		3	EPA 625	10 ug/l
BIS (2-CHLOROETHYL)-ETHER	<10	ug/l	0		<10	ug/l	0		3	EPA 625	10 ug/l
BIS (2-CHLOROISO-PROPYL) ETHER	<10	ug/l	0		<10	ug/l	0		3	EPA 625	10 ug/l
BIS (2-ETHYLHEXYL) PHTHALATE	0.34	ug/l	0	0.047	<10	ug/l	0.19	0.02	3	EPA 625	10 ug/l
4-BROMOPHENYL PHENYL ETHER	<10	ug/l	0		<10	ug/l	0		3	EPA 625	10 ug/l
BUTYL BENZYL PHTHALATE	<10	ug/l	0		<10	ug/l	0		3	EPA 625	10 ug/l
2-CHLORONAPHTHALENE	<10	ug/l	0		<10	ug/l	0		3	EPA 625	10 ug/l
4-CHLORPHENYL PHENYL ETHER	<10	ug/l	0		<10	ug/l	0		3	EPA 625	10 ug/l
CHRYSENE	<10	ug/l	0		<10	ug/l	0		3	EPA 625	10 ug/l
DI-N-BUTYL PHTHALATE	<10	ug/l	0		<10	ug/l	0		3	EPA 625	10 ug/l
DI-N-OCTYL PHTHALATE	<10	ug/l	0		<10	ug/l	0		3	EPA 625	10 ug/l
DIBENZO(A,H) ANTHRACENE	<10	ug/l	0		<10	ug/l	0		3	EPA 625	10 ug/l
1,2-DICHLOROBENZENE	<5	ug/l	0		<5	ug/l	0		3	EPA 624	5 ug/l
1,3-DICHLOROBENZENE	<5	ug/l	0		<5	ug/l	0		3	EPA 625	5 ug/l
1,4-DICHLOROBENZENE	<5	ug/l	0		<5	ug/l	0		3	EPA 625	5 ug/l
3,3-DICHLOROBENZIDINE	<20	ug/l	0		<20	ug/l	0		3	EPA 625	20 ug/l
DIETHYL PHTHALATE	<10	ug/l	0		<10	ug/l	0		3	EPA 625	10 ug/l
DIMETHYL PHTHALATE	<10	ug/l	0		<10	ug/l	0		3	EPA 625	10 ug/l
2,4-DINITROTOLUENE	<10	ug/l	0		<10	ug/l	0		3	EPA 625	10 ug/l
2,6-DINITROTOLUENE	<10	ug/l	0		<10	ug/l	0		3	EPA 625	10 ug/l
1,2-DIPHENYLHYDRAZINE	<10	ug/l	0		<10	ug/l	0		3	EPA 625	10 ug/l

## FACILITY NAME AND PERMIT NUMBER:

Lower Jackson River Regional WWTP - VA0090671

Form Approved 1/14/99  
OMB Number 2040-0086

Outfall number: 1 (Complete once for each outfall discharging effluent to waters of the United States.)

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/ MDL
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	Number of Samples		
FLUORANTHENE	<10	ug/l	0		<10	ug/l	0		3	EPA 625	10 ug/l
FLUORENE	<10	ug/l	0		<10	ug/l	0		3	EPA 625	10 ug/l
HEXACHLOROBENZENE	<10	ug/l	0		<10	ug/l	0		3	EPA 625	10 ug/l
HEXACHLOROBUTADIENE	<10	ug/l	0		<10	ug/l	0		3	EPA 625	10 ug/l
HEXACHLOROCYCLO-PENTADIENE	<10	ug/l	0		<10	ug/l	0		3	EPA 625	10 ug/l
HEXACHLOROETHANE	<10	ug/l	0		<10	ug/l	0		3	EPA 625	10 ug/l
INDENO(1,2,3-CD)PYRENE	<10	ug/l	0		<10	ug/l	0		3	EPA 625	10 ug/l
ISOPHORONE	<10	ug/l	0		<10	ug/l	0		3	EPA 625	10 ug/l
NAPHTHALENE	<10	ug/l	0		<10	ug/l	0		3	EPA 625	10 ug/l
NITROBENZENE	<10	ug/l	0		<10	ug/l	0		3	EPA 625	10 ug/l
N-NITROSODI-N-PROPYLAMINE	<10	ug/l	0		<10	ug/l	0		3	EPA 625	10 ug/l
N-NITROSODI- METHYLAMINE	<10	ug/l	0		<10	ug/l	0		3	EPA 625	10 ug/l
N-NITROSODI-PHENYLAMINE	<10	ug/l	0		<10	ug/l	0		3	EPA 625	10 ug/l
PHENANTHRENE	<10	ug/l	0		<10	ug/l	0		3	EPA 625	10 ug/l
PYRENE	<10	ug/l	0		<10	ug/l	0		3	EPA 625	10 ug/l
1,2,4-TRICHLOROBENZENE	<10	ug/l	0		<10	ug/l	0		3	EPA 625	10 ug/l

Use this space (or a separate sheet) to provide information on other base-neutral compounds requested by the permit writer.

Use this space (or a separate sheet) to provide information on other pollutants (e.g., pesticides) requested by the permit writer.

**END OF PART D.**  
**REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM 2A YOU MUST COMPLETE**

**SUPPLEMENTAL APPLICATION INFORMATION****PART E. TOXICITY TESTING DATA**

POTWs meeting one or more of the following criteria must provide the results of whole effluent toxicity tests for acute or chronic toxicity for each of the facility's discharge points: 1) POTWs with a design flow rate greater than or equal to 1.0 mgd; 2) POTWs with a pretreatment program (or those that are required to have one under 40 CFR Part 403); or 3) POTWs required by the permitting authority to submit data for these parameters.

- At a minimum, these results must include quarterly testing for a 12-month period within the past 1 year using multiple species (minimum of two species), or the results from four tests performed at least annually in the four and one-half years prior to the application, provided the results show no appreciable toxicity, and testing for acute and/or chronic toxicity, depending on the range of receiving water dilution. Do not include information on combined sewer overflows in this section. All information reported must be based on data collected through analysis conducted using 40 CFR Part 136 methods. In addition, this data must comply with QA/QC requirements of 40 CFR Part 136 and other appropriate QA/QC requirements for standard methods for analytes not addressed by 40 CFR Part 136.
- In addition, submit the results of any other whole effluent toxicity tests from the past four and one-half years. If a whole effluent toxicity test conducted during the past four and one-half years revealed toxicity, provide any information on the cause of the toxicity or any results of a toxicity reduction evaluation, if one was conducted.
- If you have already submitted any of the information requested in Part E, you need not submit it again. Rather, provide the information requested in question E.4 for previously submitted information. If EPA methods were not used, report the reasons for using alternate methods. If test summaries are available that contain all of the information requested below, they may be submitted in place of Part E.

If no biomonitoring data is required, do not complete Part E. Refer to the Application Overview for directions on which other sections of the form to complete.

**E.1. Required Tests.**

Indicate the number of whole effluent toxicity tests conducted in the past four and one-half years.



chronic



acute

**E.2. Individual Test Data.** Complete the following chart for each whole effluent toxicity test conducted in the last four and one-half years. Allow one column per test (where each species constitutes a test). Copy this page if more than three tests are being reported.

Test number: \_\_\_\_\_

Test number: \_\_\_\_\_

Test number: \_\_\_\_\_

**a. Test information.**

Test species & test method number			
Age at initiation of test			
Outfall number			
Dates sample collected			
Date test started			
Duration			

**b. Give toxicity test methods followed.**

Manual title			
Edition number and year of publication			
Page number(s)			

**c. Give the sample collection method(s) used. For multiple grab samples, indicate the number of grab samples used.**

24-Hour composite			
Grab			

**d. Indicate where the sample was taken in relation to disinfection. (Check all that apply for each)**

Before disinfection			
After disinfection			
After dechlorination			

**SUPPLEMENTAL APPLICATION INFORMATION****PART E. TOXICITY TESTING DATA**

POTWs meeting one or more of the following criteria must provide the results of whole effluent toxicity tests for acute or chronic toxicity for each of the facility's discharge points: 1) POTWs with a design flow rate greater than or equal to 1.0 mgd; 2) POTWs with a pretreatment program (or those that are required to have one under 40 CFR Part 403); or 3) POTWs required by the permitting authority to submit data for these parameters.

- At a minimum, these results must include quarterly testing for a 12-month period within the past 1 year using multiple species (minimum of two species), or the results from four tests performed at least annually in the four and one-half years prior to the application, provided the results show no appreciable toxicity, and testing for acute and/or chronic toxicity, depending on the range of receiving water dilution. Do not include information on combined sewer overflows in this section. All information reported must be based on data collected through analysis conducted using 40 CFR Part 136 methods. In addition, this data must comply with QA/QC requirements of 40 CFR Part 136 and other appropriate QA/QC requirements for standard methods for analytes not addressed by 40 CFR Part 136.
- In addition, submit the results of any other whole effluent toxicity tests from the past four and one-half years. If a whole effluent toxicity test conducted during the past four and one-half years revealed toxicity, provide any information on the cause of the toxicity or any results of a toxicity reduction evaluation, if one was conducted.
- If you have already submitted any of the information requested in Part E, you need not submit it again. Rather, provide the information requested in question E.4 for previously submitted information. If EPA methods were not used, report the reasons for using alternate methods. If test summaries are available that contain all of the information requested below, they may be submitted in place of Part E.

If no biomonitoring data is required, do not complete Part E. Refer to the Application Overview for directions on which other sections of the form to complete.

**E.1. Required Tests.**

Indicate the number of whole effluent toxicity tests conducted in the past four and one-half years.

☒ chronic      ☒ acute

**E.2. Individual Test Data.** Complete the following chart for each whole effluent toxicity test conducted in the last four and one-half years. Allow one column per test (where each species constitutes a test). Copy this page if more than three tests are being reported.

Test number: \_\_\_\_\_ Test number: \_\_\_\_\_ Test number: \_\_\_\_\_

**a. Test information.**

Test species & test method number	See Attached Summary		
Age at initiation of test			
Outfall number			
Dates sample collected			
Date test started			
Duration			

**b. Give toxicity test methods followed.**

Manual title			
Edition number and year of publication			
Page number(s)			

**c. Give the sample collection method(s) used. For multiple grab samples, indicate the number of grab samples used.**

24-Hour composite			
Grab			

**d. Indicate where the sample was taken in relation to disinfection. (Check all that apply for each)**

Before disinfection			
After disinfection			
After dechlorination			

## FACILITY NAME AND PERMIT NUMBER:

Lower Jackson River Regional WWTP - VA0090671

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Test number: \_\_\_\_\_

Test number: \_\_\_\_\_

Test number: \_\_\_\_\_

e. Describe the point in the treatment process at which the sample was collected.

Sample was collected:

f. For each test, include whether the test was intended to assess chronic toxicity, acute toxicity, or both.

Chronic toxicity

Acute toxicity

g. Provide the type of test performed.

Static

Static-renewal

Flow-through

h. Source of dilution water. If laboratory water, specify type; if receiving water, specify source.

Laboratory water

Receiving water

i. Type of dilution water. If salt water, specify "natural" or type of artificial sea salts or brine used.

Fresh water

Salt water

j. Give the percentage effluent used for all concentrations in the test series.

k. Parameters measured during the test. (State whether parameter meets test method specifications)

pH

Salinity

Temperature

Ammonia

Dissolved oxygen

l. Test Results.

Acute:

Percent survival in 100%  
effluent

%

%

%

LC<sub>50</sub>

95% C.I.

%

%

%

Control percent survival

%

%

%

Other (describe)

## FACILITY NAME AND PERMIT NUMBER:

Lower Jackson River Regional WWTP - VA0090671

Form Approved 1/14/99  
OMB Number 2040-0086

Chronic:

NOEC	%	%	%
IC <sub>25</sub>	%	%	%
Control percent survival	%	%	%
Other (describe)			

m. Quality Control/Quality Assurance.

Is reference toxicant data available?			
Was reference toxicant test within acceptable bounds?			
What date was reference toxicant test run (MM/DD/YYYY)?			
Other (describe)			

**E.3. Toxicity Reduction Evaluation.** Is the treatment works involved in a Toxicity Reduction Evaluation?☐ Yes ☒ No

If yes, describe:

**E.4. Summary of Submitted Biomonitoring Test Information.** If you have submitted biomonitoring test information, or information regarding the cause of toxicity, within the past four and one-half years, provide the dates the information was submitted to the permitting authority and a summary of the results.

Date submitted: \_\_\_\_\_ (MM/DD/YYYY)

Summary of results: (see instructions)

All testing results have been previously submitted, reviewed and accepted. See Attached Summary.**END OF PART E.****REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM 2A YOU MUST COMPLETE.**

## FACILITY INFORMATION

**FACILITY:** Lower Jackson River Regional WWTP

**LOCATION:** Alleghany County, Virginia

**VPDES PERMIT NUMBER:** VA0090671

**EXPIRATION DATE:** 09/28/16

**SIC CODE (DESCRIPTION):** 4952 Sewerage Systems

**RECEIVING STREAM:**

Jackson River

Basin: James River (Upper)

Subbasin: NA

Section: 12

Class: IV

Special Standards: None

Flow, 1Q10: 119 MGD

Flow, 7Q10: 191 MGD

**OUTFALL 001:** Discharge began in September, 2011

2.6 MGD: 5 stage Bardenpho Activated Sludge Process, UV disinfection, post aeration

**WET REQUIREMENTS:**

Quarterly acute and chronic toxicity testing using 24-hour flow-proportioned samples until 8 quarterly tests have been performed and continue annually for the life of the permit. The acute tests shall be 48-hour static tests using *Ceriodaphnia dubia* and *Pimephales promelas*. The chronic tests shall be Chronic 3-Brood Static Renewal Survival and Reproduction Test using *Ceriodaphnia dubia* and Chronic 7-Day Static Renewal Survival and Growth Test using *Pimephales promelas*. The test dilutions should be able to determine compliance with the following endpoints

$LC_{50} \geq 33\%$

Chronic NOEC of  $\geq 4\%$  equivalent to a  $TU_c \leq 25$

Table 1 Acute Toxicity Test Data for the LJRR WWTP; VA0090671; Outfall 001;  
Endpoint LC<sub>50</sub> = 33%

Test Date - Quarter	Test Organism	LC <sub>50</sub> (%)	% Survival in 100% Effluent	Testing Laboratory
3/6/12 - 1*	<i>C. dubia</i>	>100	100	CBI
3/6/12 - 1*	<i>P. promelas</i>	>100	100	CBI
6/20/12 - 2	<i>C. dubia</i>	>100	100	CBI
6/20/12 - 2	<i>P. promelas</i>	>100	100	CBI
8/29/12 - 3	<i>C. dubia</i>	>100	100	CBI
8/29/12 - 3	<i>P. promelas</i>	>100	100	CBI
11/13/12 - 4	<i>C. dubia</i>	>100	100	CBI
11/13/12 - 4	<i>P. promelas</i>	>100	100	CBI
3/20/13 - 5	<i>C. dubia</i>	>100	100	CBI
3/20/13 - 5	<i>P. promelas</i>	>100	100	CBI
6/19/13 - 6	<i>C. dubia</i>	>100	100	CBI
6/19/13 - 6	<i>P. promelas</i>	>100	100	CBI
8/28/13 - 7	<i>C. dubia</i>	>100	100	CBI
8/28/13 - 7	<i>P. promelas</i>	>100	100	CBI
10/30/13 - 8	<i>C. dubia</i>	>100	100	CBI
10/30/13 - 8	<i>P. promelas</i>	>100	100	CBI
3/12/14 - 9	<i>C. dubia</i>	>100	100	CBI
3/12/14 - 9	<i>P. promelas</i>	>100	100	CBI
6/18/14 - 10	<i>C. dubia</i>	>100	100	CBI
6/18/14 - 10	<i>P. promelas</i>	>100	100	CBI
7/22/15 - A1	<i>C. dubia</i>	>100	100	CBI
7/22/15 - A1	<i>P. promelas</i>	>100	100	CBI

\* Notes:

Q1 samples collected as time composites rather than flow proportional composites

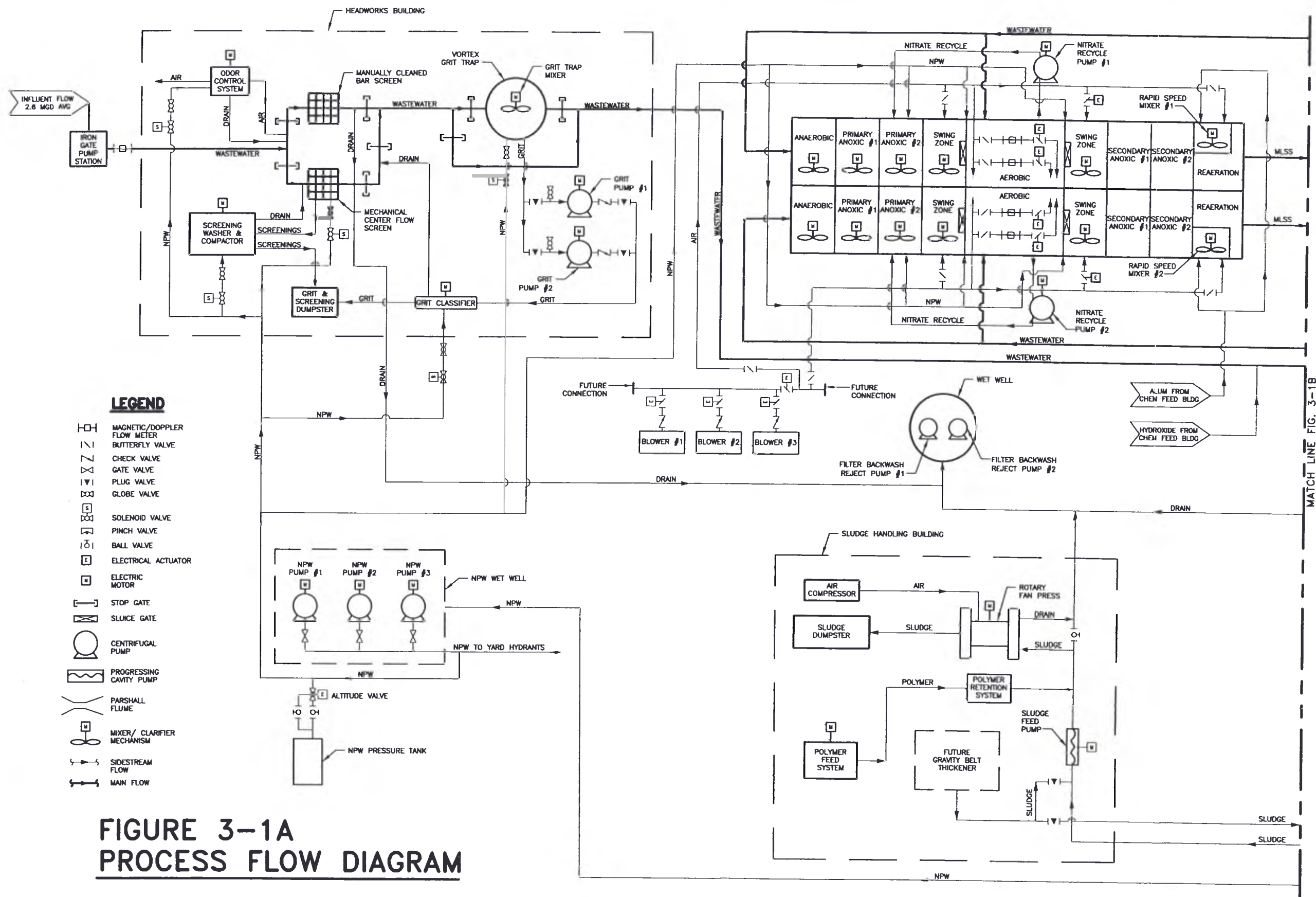
Table 2 Chronic Toxicity Test Data for the LJRR WWTP; VA0090671; Outfall 001;  
Endpoint NOEC  $\geq$  4%

Test Date - Quarter	Test Organism	NOEC Survival (%)	NOEC Growth or Reproduction (%)	% Survival in 100% Effluent	Testing Laboratory
3/5/12 - 1*	<i>C. dubia</i>	100	100	100	CBI
3/5/12 - 1*	<i>P. promelas</i>	100	100	93	CBI
6/19/12 - 2	<i>C. dubia</i>	100	100	100	CBI
6/19/12 - 2	<i>P. promelas</i>	100	100	88	CBI
8/24/12 - 3	<i>C. dubia</i>	100	100	100	CBI
8/24/12 - 3	<i>P. promelas</i>	100	100	100	CBI
11/13/12 - 4	<i>C. dubia</i>	100	100	100	CBI
11/13/12 - 4	<i>P. promelas</i>	100	100	100	CBI
3/19/13 - 5	<i>C. dubia</i>	100	100	90	CBI
3/19/13 - 5	<i>P. promelas</i>	100	100	98	CBI
6/18/13 - 6	<i>C. dubia</i>	100	100	100	CBI
6/18/13 - 6	<i>P. promelas</i>	100	100	98	CBI
8/27/13 - 7	<i>C. dubia</i>	100	100	100	CBI
8/27/13 - 7	<i>P. promelas</i>	100	100	92.5	CBI
10/29/13 - 8	<i>C. dubia</i>	100	100	100	CBI
10/29/13 - 8	<i>P. promelas</i>	100	100	97.5 <sup>c</sup>	CBI
3/11/14 - 9	<i>C. dubia</i>	100	100	100	CBI
3/11/14 - 9	<i>P. promelas</i>	100	100	100	CBI
6/17/14 - 10	<i>C. dubia</i>	100	100	100	CBI
6/17/14 - 10	<i>P. promelas</i>	100	100	100	CBI
7/22/15 - A1	<i>C. dubia</i>	100	100	100	CBI
7/22/15 - A1	<i>P. promelas</i>	100	100	97.5 <sup>c</sup>	CBI

\* Notes:

c indicates same % survival as control

Q1 samples collected as time composites rather than flow proportional composites



MATCH LINE FIG. 3-1B

LOWER JACKSON RIVER REGIONAL  
WASTEWATER TREATMENT PLANT

ALLEGANY COUNTY, VIRGINIA

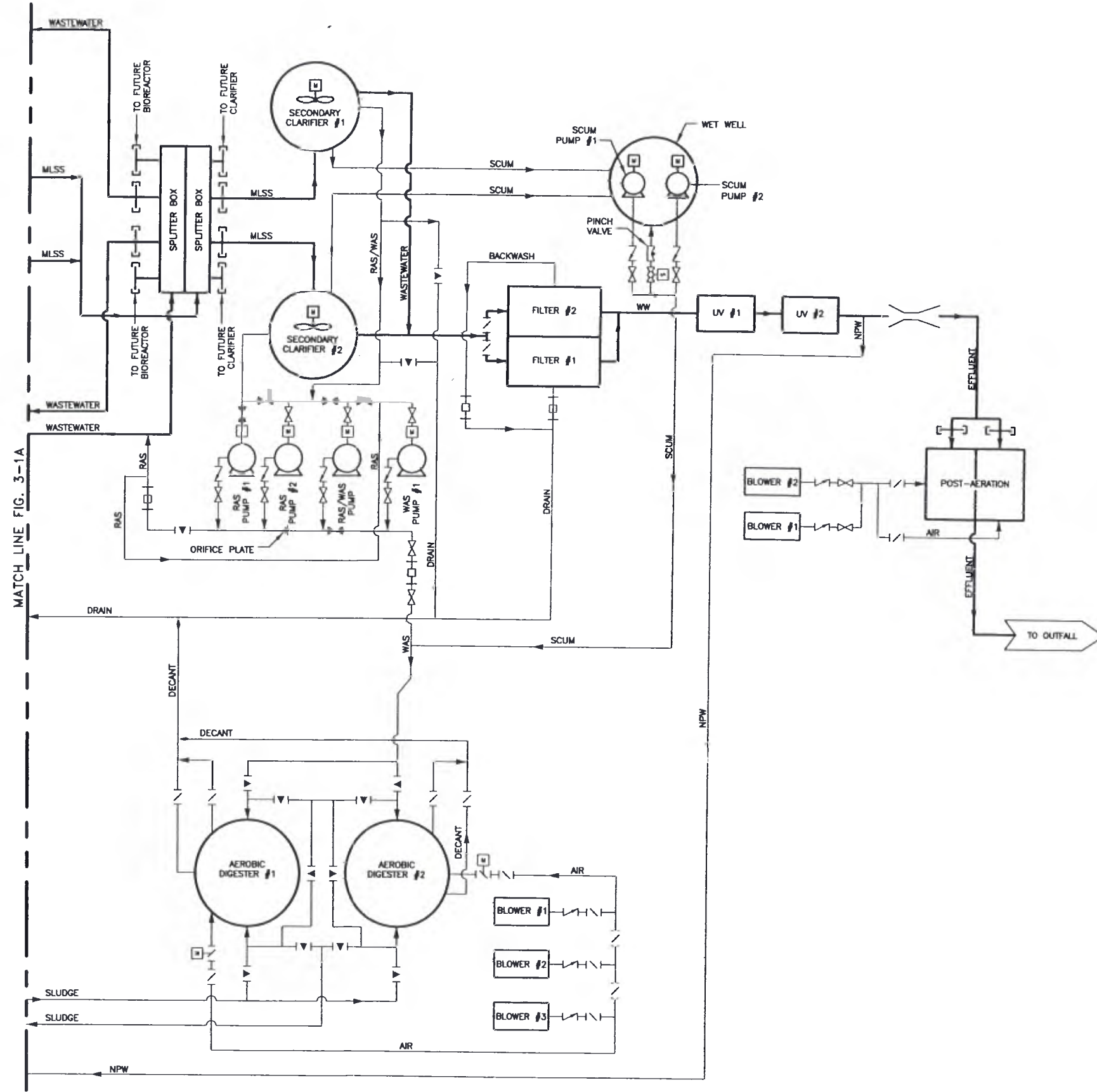
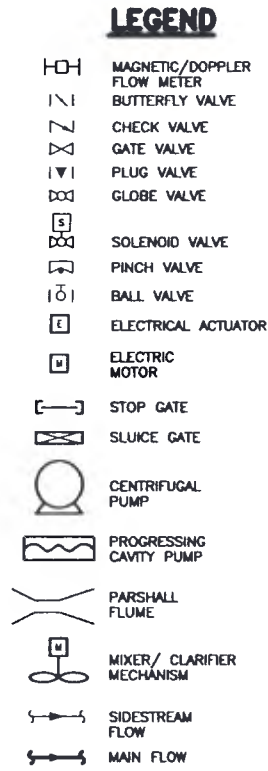
SCALE: NO SCALE

AECOM  
1315 FRANKLIN ROAD  
ROANOKE, VA 24018  
(540) 887-3100

**AECOM**

SHEET REFERENCE: FIG. 3-1A

# FIGURE 3-1B PROCESS FLOW DIAGRAM



LOWER JACKSON RIVER REGIONAL  
WASTEWATER TREATMENT PLANT

ALLEGANY COUNTY, VIRGINIA

AECOM  
1315 FRANKLIN ROAD  
ROANOKE, VA 24018  
(840) 887-3100

**AECOM**

SCALE: NO SCALE

SHEET REFERENCE: FIG. 3-1B



EPA ID Number (copy from Item 1 of Form 1)  
VA0090671

Form Approved: OMB No. 2040-0086  
Approval expires 5-31-92

Please print or type in the unshaded areas only.

FORM  
2F  
NPDES



U.S. Environmental Protection Agency  
Washington, DC 20460

## Application for Permit to Discharge Storm Water Discharges Associated with Industrial Activity

### Paperwork Reduction Act Notice

Public reporting burden for this application is estimated to average 28.6 hours per application, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate, any other aspect of this collection of information, or suggestions for improving this form, including suggestions which may increase or reduce this burden to: Chief, Information Policy Branch, PM-223, U.S. Environmental Protection Agency, 1200 Pennsylvania Avenue, NW, Washington, DC 20460, or Director, Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC 20503.

### I. Outfall Location

For each outfall, list the latitude and longitude of its location to the nearest 15 seconds and the name of the receiving water.

A. Outfall Number (list)	B. Latitude		C. Longitude		D. Receiving Water (name)
002	37	79 32	79	78 040	Jackson River

### II. Improvements

A. Are you now required by any Federal, State, or local authority to meet any implementation schedule for the construction, upgrading or operation of wastewater treatment equipment or practices or any other environmental programs which may affect the discharges described in this application? This includes, but is not limited to, permit conditions, administrative or enforcement orders, enforcement compliance schedule letters, stipulations, court orders, and grant or loan conditions.

1. Identification of Conditions, Agreements, Etc.	2. Affected Outfalls		3. Brief Description of Project	4. Final Compliance Date	
	number	source of discharge		a. req.	b. proj.
N/A					

B. You may attach additional sheets describing any additional water pollution (or other environmental projects which may affect your discharges) you now have under way or which you plan. Indicate whether each program is now under way or planned, and indicate your actual or planned schedules for construction.

### III. Site Drainage Map

Attach a site map showing topography (or indicating the outline of drainage areas served by the outfalls(s) covered in the application if a topographic map is unavailable) depicting the facility including: each of its intake and discharge structures; the drainage area of each storm water outfall; paved areas and buildings within the drainage area of each storm water outfall, each known past or present areas used for outdoor storage or disposal of significant materials, each existing structural control measure to reduce pollutants in storm water runoff, materials loading and access areas, areas where pesticides, herbicides, soil conditioners and fertilizers are applied; each of its hazardous waste treatment, storage or disposal units (including each area not required to have a RCRA permit which is used for accumulating hazardous waste under 40 CFR 262.34); each well where fluids from the facility are injected underground; springs, and other surface water bodies which received storm water discharges from the facility.

**IV. Narrative Description of Pollutant Sources**

A. For each outfall, provide an estimate of the area (include units) of impervious surfaces (including paved areas and building roofs) drained to the outfall, and an estimate of the total surface area drained by the outfall.

Outfall Number	Area of Impervious Surface (provide units)	Total Area Drained (provide units)	Outfall Number	Area of Impervious Surface (provide units)	Total Area Drained (provide units)
.002	20,000 sq ft	240,000 sq ft			

B. Provide a narrative description of significant materials that are currently or in the past three years have been treated, stored or disposed in a manner to allow exposure to storm water; method of treatment, storage, or disposal; past and present materials management practices employed to minimize contact by these materials with storm water runoff; materials loading and access areas, and the location, manner, and frequency in which pesticides, herbicides, soil conditioners, and fertilizers are applied.

All chemicals are stored inside buildings. All buildings are equipped with floor drains that drain to the Filter Backwash Pump Station and pumped back through the treatment plant. The diesel tank for the generator is equipped with a containment tank.

C. For each outfall, provide the location and a description of existing structural and nonstructural control measures to reduce pollutants in storm water runoff; and a description of the treatment the storm water receives, including the schedule and type of maintenance for control and treatment measures and the ultimate disposal of any solid or fluid wastes other than by discharge.

Outfall Number	Treatment	List Codes from Table 2F-1
.002	The site area drains to a containment and sedimentation area prior to discharge. Additionally the storm water outfall is lined with rip rap prior to entering the river	

**V. Nonstormwater Discharges**

A. I certify under penalty of law that the outfall(s) covered by this application have been tested or evaluated for the presence of nonstormwater discharges, and that all nonstormwater discharged from these outfall(s) are identified in either an accompanying Form 2C or Form 2E application for the outfall.

Name and Official Title (type or print)	Signature	Date Signed
Jon Lanford, County Administrator		07 JUNE 2016

B. Provide a description of the method used, the date of any testing, and the onsite drainage points that were directly observed during a test.

Visual inspection of the discharge point during dry weather.

**VI. Significant Leaks or Spills**

Provide existing information regarding the history of significant leaks or spills of toxic or hazardous pollutants at the facility in the last three years, including the approximate date and location of the spill or leak, and the type and amount of material released.

No significant leaks or spills have occurred.

**VII. Discharge Information**

A, B, C, & D: See instructions before proceeding. Complete one set of tables for each outfall. Annotate the outfall number in the space provided.  
Table VII-A, VII-B, VII-C are included on separate sheets numbers VII-1 and VII-2.

E. Potential discharges not covered by analysis – is any toxic pollutant listed in table 2F-2, 2F-3, or 2F-4, a substance or a component of a substance which you currently use or manufacture as an intermediate or final product or byproduct?

☐ Yes (list all such pollutants below)

☒ No (go to Section IX)

**VIII. Biological Toxicity Testing Data**

Do you have any knowledge or reason to believe that any biological test for acute or chronic toxicity has been made on any of your discharges or on a receiving water in relation to your discharge within the last 3 years?

☐ Yes (list all such pollutants below)

☒ No (go to Section IX)

**IX. Contract Analysis Information**

Were any of the analyses reported in Item VII performed by a contract laboratory or consulting firm?

☒ Yes (list the name, address, and telephone number of, and pollutants analyzed by, each such laboratory or firm below)

☐ No (go to Section X)

A. Name	B. Address	C. Area Code & Phone No.	D. Pollutants Analyzed
REIC, Inc	3029-C Peters Creep Road Roanoke, VA 24019	(540) 777-1276	Oil and Grease (HEM), Total Nitrogen and Total Phosphorous

**X. Certification**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

A. Name & Official Title (Type Or Print) Jon Lanford, Alleghany County Administrator	B. Area Code and Phone No. (540) 863-6600
C. Signature J. A. L	D. Date Signed 07 JUNE 2016

Part A – You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

Part B – List each pollutant that is limited in an effluent guideline which the facility is subject to or any pollutant listed in the facility's NPDES permit for its process wastewater (if the facility is operating under an existing NPDES permit). Complete one table for each outfall. See the instructions for additional details and requirements.

Continue on Reverse

Continued from the Front

Part C - List each pollutant shown in Table 2F-2, 2F-3, and 2F-4 that you know or have reason to believe is present. See the instructions for additional details and requirements. Complete one table for each outfall.

[illegible]

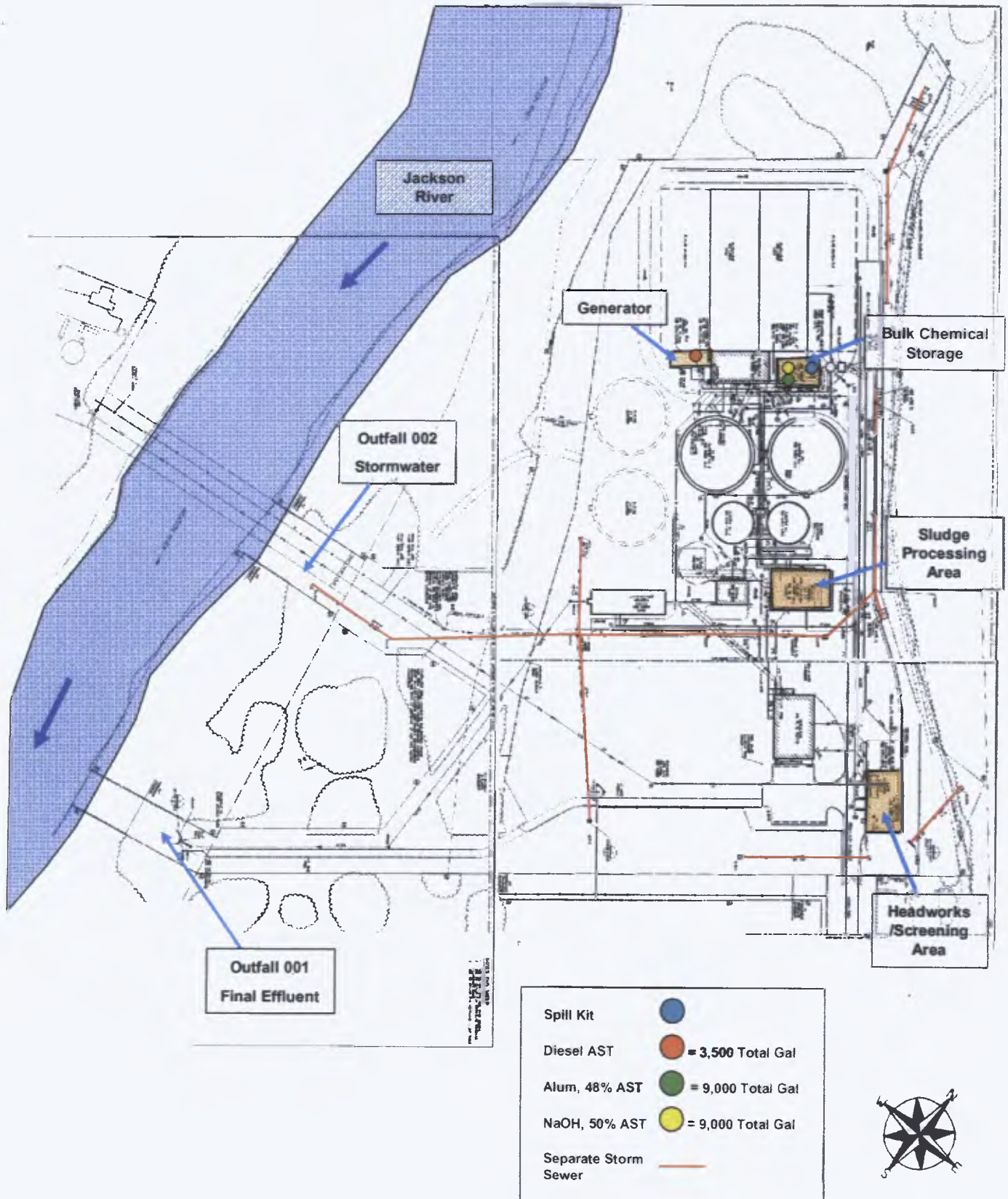
Part D – Provide data for the storm event(s) which resulted in the maximum values for the flow weighted composite sample.

1. Date of Storm Event	2. Duration of Storm Event (in minutes)	3. Total rainfall during storm event (in inches)	4. Number of hours between beginning of storm measured and end of previous measurable rain event	5. Maximum flow rate during rain event (gallons/minute or specify units)	6. Total flow from rain event (gallons or specify units)
11/26/13	720	2.4	192	approximately 5 gpm	approximately 1000 gal

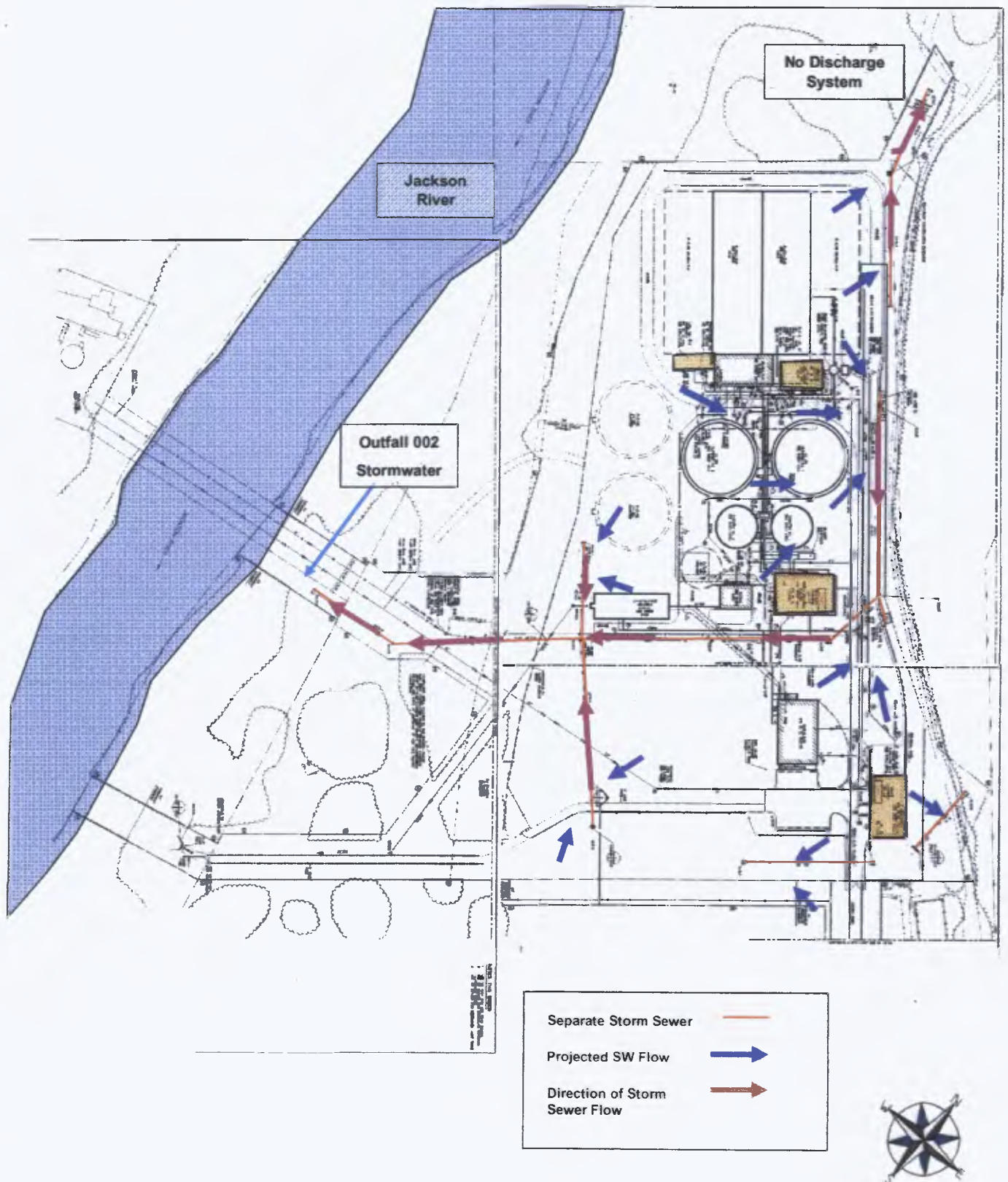
7. Provide a description of the method of flow measurement or estimate.

Timed bucket fill.

# Lower Jackson Regional WWTP Facility Map



# Lower Jackson Regional WWTP Projected SW Flow Map









**SCREENING INFORMATION**

This application is divided into sections. Sections A pertain to all applicants. The applicability of Sections B, C and D depend on your facility's sewage sludge use or disposal practices. The information provided on this page will help you determine which sections to fill out.

1. All applicants must complete Section A (General Information).

2. Does this facility generate sewage sludge? ☒ Yes ☐ No

Does this facility derive a material from sewage sludge? ☐ Yes ☒ No

If you answered Yes to either, complete Section B (Generation Of Sewage Sludge Or Preparation Of A Material Derived From Sewage Sludge).

3. Does this facility apply sewage sludge to the land? ☐ Yes ☒ No

Is sewage sludge from this facility applied to the land? ☐ Yes ☒ No

If you answer No to all above, skip Section C.

If you answered Yes to either, answer the following three questions:

a. Does the sewage sludge from this facility meet the ceiling concentrations, pollutant concentrations, Class A pathogen reduction requirements and one of the vector attraction reduction requirements 1-8, as identified in the instructions?  
☐ Yes ☐ No

b. Is sewage sludge from this facility placed in a bag or other container for sale or give-away for application to the land? ☐ Yes ☐ No

c. Is sewage sludge from this facility sent to another facility for treatment or blending? ☐ Yes ☐ No

If you answered No to all three, complete Section C (Land Application Of Bulk Sewage Sludge).

If you answered Yes to a, b or c, skip Section C.

4. Do you own or operate a surface disposal site? ☐ Yes ☒ No

If Yes, complete Section D (Surface Disposal).

All applicants must complete this section.

1. Facility Information.

- a. Facility name: Lower Jackson River Regional WWTP
- b. Contact person: Brian White  
Title: Plant Manager  
Phone: ( 540 ) 862-5138
- c. Mailing address: Lower Jackson River WWTP  
Street or P.O. Box: 50 Fork Farm Road  
City or Town: Eagle Rock State: VA Zip: 24422
- d. Facility location:  
Street or Route #: 50 Fork Farm Road  
County: Alleghany County  
City or Town: Eagle Rock State: VA Zip: 24085
- e. Is this facility a Class I sludge management facility?    Yes   X   No
- f. Facility design flow rate: 2.6 mgd
- g. Total population served: 5400
- h. Indicate the type of facility:  
  X   Publicly owned treatment works (POTW)  
       Privately owned treatment works  
       Federally owned treatment works  
       Blending or treatment operation  
       Surface disposal site  
       Other (describe):

2. Applicant Information. If the applicant is different from the above, provide the following:

- a. Applicant name: ESS, Ltd.
- b. Mailing address:  
Street or P.O. Box: P. O. Box 520  
City or Town: Culpeper State: VA Zip: 22701
- c. Contact person: Brian White  
Title: Plant Manager  
  
Phone: ( 540 ) 862-5138
- d. Is the applicant the owner or operator (or both) of this facility?  
       owner       X       operator
- d. Should correspondence regarding this permit be directed to the facility or the applicant?  
      X       facility       X       applicant

3. Permit Information.

- a. Facility's VPDES permit number (if applicable): VA0090671
- b. List on this form or an attachment, all other federal, state or local permits or construction approvals received or applied for that regulate this facility's sewage sludge management practices: N/A  
Permit Number: \_\_\_\_\_ Type of Permit: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

4. Indian Country. Does any generation, treatment, storage, application to land or disposal of sewage sludge from this facility occur in Indian Country?    Yes   X   No If yes, describe:

**Lower Jackson Wastewater Treatment Plant is located in Alleghany County, VA.**

**Outfall 001 discharges to the Jackson River. The proposed outfall will be located at:  
Latitude 37° 47' 21" Longitude 79° 47' 04"**

## Part A Item 6: Line drawing and narrative

Refer to the attached Figure 3-2. The Digesters and Solids Handling Building is outlined in red. Piping is indicated by individual colors and is further described below.

Waste Activated Sludge is pumped from the Return Activated Sludge line located in the Basin Basement to the aerobic digesters (shown in blue) via one of (2) WAS pumps. In the digesters sludge is aerated and volatile solids reduced. Sludge thickening is accomplished through periodic gravity settling of the digester sludge. Supernatant liquid from the thickening process is decanted from the digesters and flows to the Filter Backwash Pump Station (shown in pink) where it is pumped back to the Headworks Building (shown in black). Digested sludge is pumped from the digesters to the Solids Handling Building (shown in orange) where it is dewatered by the Rotary Fan Press. Filtrate from the press is collected in the Solids Building floor drains and flows to the Filter Backwash Pump Station (shown in green). The Filter Backwash Pump Station pumps back to the Headworks Building (shown in black). Dewatered sludge cake is placed into a hopper inside the solids building prior to removal from the facility.

**AECOM**

ALCOM  
1315 FRANKLIN ROAD  
SPRINGFIELD, VA 22916  
(800) 467-7100

SHEET REFERENCE: FIG 3-2

5. Topographic Map. Provide a topographic map or maps (or other appropriate maps if a topographic map is unavailable) that shows the following information. Maps should include the area one mile beyond all property boundaries of the facility:
- Location of all sewage sludge management facilities, including locations where sewage sludge is generated, stored, treated, or disposed.
  - Location of all wells, springs, and other surface water bodies listed in public records or otherwise known to the applicant within 1/4 mile of the property boundaries.

6. Line Drawing. Provide a line drawing and/or a narrative description that identifies all sewage sludge processes that will be employed during the term of the permit including all processes used for collecting, dewatering, storing, or treating sewage sludge, the destination(s) of all liquids and solids leaving each unit, and all methods used for pathogen reduction and vector attraction reduction. **See attached line drawing and narrative.**

7. Contractor Information. Are any operational or maintenance aspects of this facility related to sewage sludge generation, treatment, use or disposal the responsibility of a contractor? ☒ Yes ☐ No  
If yes, provide the following for each contractor (attach additional pages if necessary).  
Name: Environmental Systems Service, Ltd.

Mailing address:

Street or P.O. Box: P. O. Box 520

City or Town: Culpeper State: VA Zip: 22701

Phone: ( 540 ) 825-6660

Contractor's Federal, State or Local Permit Number(s) applicable to this facility's sewage sludge:

If the contractor is responsible for the use and/or disposal of the sewage sludge, provide a description of the service to be provided to the applicant and the respective obligations of the applicant and the contractor(s).

8. Pollutant Concentrations. Using the table below or a separate attachment, provide sewage sludge monitoring data for the pollutants which limits in sewage sludge have been established in 9 VAC 25-31-10 et seq. for this facility's expected use or disposal practices. All data must be based on three or more samples taken at least one month apart and must be no more than four and one-half years old. **Note: All Pollutants sampled on 9/23/15, 11/4/15 and 12/9/15**

POLLUTANT	CONCENTRATION (mg/kg dry weight)	SAMPLE DATE	ANALYTICAL METHOD	DETECTION LEVEL FOR ANALYSIS
Arsenic	6.88, 7.25, 8.64	9/23, 11/4, 12/9/15	SW6010C (2007)	5.00 mg/Kg-dry
Cadmium	2.53, 2.60, 2.56		SW6010C (2007)	1.00 mg/Kg-dry
Chromium	21.3, 21.5, 21.4		SW6010C (2007)	5.00 mg/Kg-dry
Copper	434, 421, 390		SW6010C (2007)	5.00 mg/Kg-dry
Lead	76.1, 74.4, 71.9		SW6010C (2007)	5.00 mg/Kg-dry
Mercury	0.653, 0.869, 0.600		SW7471B (2007)	0.100 mg/Kg-dry
Molybdenum	6.45, 6.09, 6.31		SW6010C (2007)	5.00 mg/Kg-dry
Nickel	19.9, 20.8, 24.1		SW6010C (2007)	5.00 mg/Kg-dry
Selenium	6.33, 5.99, 9.72		SW6010C (2007)	5.00 mg/Kg-dry
Zinc	903, 898, 852		SW6010C (2007)	5.00 mg/Kg-dry

9. Certification. Read and submit the following certification statement with this application. Refer to the instructions to determine who is an officer for purposes of this certification. Indicate which parts of the application you have completed and are submitting:

☒ Section A (General Information)

☒ Section B (Generation of Sewage Sludge or Preparation of a Material Derived from Sewage Sludge)

☐ Section C (Land Application of Bulk Sewage Sludge)

☐ Section D (Surface Disposal)

**FACILITY NAME:** Lower Jackson River Regional WWTP **VPDES PERMIT NUMBER:** VA0090671

Section A Item 7 Additional Contractor Information

Sludge Hauling:

Name: Thompson Trucking

Mailing address:

Street or P.O. Box: 11939 Richmond HWY

City or Town: Concord State: VA Zip: 24538

Phone: ( 434 ) 993-2195

Contractor's Federal, State or Local Permit Number(s) applicable to this facility's sewage sludge:

**FACILITY NAME:** Lower Jackson River Regional WWTP

**VPDES PERMIT NUMBER:** VA0090671

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name and official title Jon Lanford, Alleghany County Administrator

Signature J. A. L. / J Date Signed 02 JUNE 2016

Telephone number (540) 863-6600

Upon request of the department, you must submit any other information necessary to assess sewage sludge use or disposal practices at your facility or identify appropriate permitting requirements.

**SECTION B. GENERATION OF SEWAGE SLUDGE OR PREPARATION  
OF A MATERIAL DERIVED FROM SEWAGE SLUDGE**

Complete this section if your facility generates sewage sludge or derives a material from sewage sludge

1. Amount Generated On Site.  
Total dry metric tons per 365-day period generated at your facility: 125 dry metric tons
  
2. Amount Received from Off Site. If your facility receives sewage sludge from another facility for treatment, use or disposal, provide the following information for each facility from which sewage sludge is received. If you receive sewage sludge from more than one facility, attach additional pages as necessary. N/A
  - a. Facility name:
  - b. Contact Person:  
Title:  
Phone ( )
  - c. Mailing address:  
Street or P.O. Box:  
City or Town: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_
  - d. Facility Address:  
(not P.O. Box)
  - e. Total dry metric tons per 365-day period received from this facility: \_\_\_\_\_ dry metric tons
  - f. Describe, on this form or on another sheet of paper, any treatment processes known to occur at the off-site facility, including blending activities and treatment to reduce pathogens or vector attraction characteristics:
  
3. Treatment Provided at Your Facility.
  - a. Which class of pathogen reduction is achieved for the sewage sludge at your facility?  
☐ Class A    ☐ Class B    ☒ Neither or unknown
  - b. Describe, on this form or another sheet of paper, any treatment processes used at your facility to reduce pathogens in sewage sludge: Aerobic Digestion
  
  - c. Which vector attraction reduction option is met for the sewage sludge at your facility?
    - ☐ Option 1 (Minimum 38 percent reduction in volatile solids)
    - ☐ Option 2 (Anaerobic process, with bench-scale demonstration)
    - ☐ Option 3 (Aerobic process, with bench-scale demonstration)
    - ☐ Option 4 (Specific oxygen uptake rate for aerobically digested sludge)
    - ☐ Option 5 (Aerobic processes plus raised temperature)
    - ☐ Option 6 (Raise pH to 12 and retain at 11.5)
    - ☐ Option 7 (75 percent solids with no unstabilized solids)
    - ☐ Option 8 (90 percent solids with unstabilized solids)
    - ☒ None or unknown
  - d. Describe, on this form or another sheet of paper, any treatment processes used at your facility to reduce vector attraction properties of sewage sludge: N/A
  
  - e. Describe, on this form or another sheet of paper, any other sewage sludge treatment activities, including blending, not identified in a - d above: N/A
  
4. Preparation of Sewage Sludge Meeting Ceiling and Pollutant Concentrations, Class A Pathogen Requirements and One of Vector Attraction Reduction Options 1-8 (EQ Sludge).  
(If sewage sludge from your facility does not meet all of these criteria, skip Question 4.) N/A
  - a. Total dry metric tons per 365-day period of sewage sludge subject to this section that is applied to the land:  
\_\_\_\_\_ dry metric tons
  - b. Is sewage sludge subject to this section placed in bags or other containers for sale or give-away?

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- j Does the receiving facility place sewage sludge from your facility in a bag or other container for sale or give-away for application to the land? ☐ Yes ☐ No  
If yes, provide a copy of all labels or notices that accompany the product being sold or given away.
- k Will the sewage sludge be transported to the receiving facility in a truck-mounted watertight tank normally used for such purposes? ☐ Yes ☐ No. If no, provide description and specification on the vehicle used to transport the sewage sludge to the receiving facility.  
Show the haul route(s) on a location map or briefly describe the haul route below and indicate the days of the week and the times of the day sewage sludge will be transported.

7. Land Application of Bulk Sewage Sludge. N/A

(Complete Question 7.a if sewage sludge from your facility is applied to the land, unless the sewage sludge is covered in Questions 4, 5 or 6; complete Question 7.b, c & d only if you are responsible for land application of sewage sludge.)

- a. Total dry metric tons per 365-day period of sewage sludge applied to all land application sites: \_\_\_\_\_ dry metric tons
- b. Do you identify all land application sites in Section C of this application? ☐ Yes ☐ No  
If no, submit a copy of the Land Application Plan (LAP) with this application (LAP should be prepared in accordance with the instructions).
- c. Are any land application sites located in States other than Virginia? ☐ Yes ☐ No  
If yes, describe, on this form or on another sheet of paper, how you notify the permitting authority for the States where the land application sites are located. Provide a copy of the notification.
- d. Attach a copy of any information you provide to the owner or lease holder of the land application sites to comply with the "notice and necessary" information requirement of 9 VAC 25-31-530 F and/or H (Examples may be obtained in Appendix IV).

8. Surface Disposal. N/A

(Complete Question 8 if sewage sludge from your facility is placed on a surface disposal site.)

- a. Total dry metric tons per 365-day period of sewage sludge from your facility placed on all surface disposal sites: \_\_\_\_\_ dry metric tons
- b. Do you own or operate all surface disposal sites to which you send sewage sludge for disposal?  
☐ Yes ☐ No  
If no, answer questions c - g for each surface disposal site that you do not own or operate. If you send sewage sludge to more than one surface disposal site, attach additional pages as necessary.
- c. Site name or number:
- d. Contact person:  
Title:  
Phone: ( )  
Contact is: ☐ Site Owner ☐ Site operator
- e. Mailing address.  
Street or P.O. Box:  
City or Town: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_
- f. Total dry metric tons per 365-day period of sewage sludge from your facility placed on this surface disposal site: \_\_\_\_\_ dry metric tons
- g. List, on this form or an attachment, the surface disposal site VPDES permit number as well as the numbers of all other federal, state or local permits that regulate the sewage sludge use or disposal practices at the surface disposal site:  
Permit Number: \_\_\_\_\_ Type of Permit: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

9. Incineration. N/A

(Complete Question 9 if sewage sludge from your facility is fired in a sewage sludge incinerator.)

- a. Total dry metric tons per 365-day period of sewage sludge from your facility fired in a sewage sludge incinerator: \_\_\_\_\_ dry metric tons
- b. Do you own or operate all sewage sludge incinerators in which sewage sludge from your facility is fired?  
\_\_\_ Yes \_\_\_ No  
If no, answer questions c - g for each sewage sludge incinerator that you do not own or operate. If you send sewage sludge to more than one sewage sludge incinerator, attach additional pages as necessary.
- c. Incinerator name or number:
- d. Contact person:  
Title:  
Phone: (    )  
Contact is: \_\_\_ Incinerator Owner \_\_\_ Incinerator Operator
- e. Mailing address.  
Street or P.O. Box:  
City or Town: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_
- f. Total dry metric tons per 365-day period of sewage sludge from your facility fired in this sewage sludge incinerator: \_\_\_\_\_ dry metric tons
- g. List on this form or an attachment the numbers of all other federal, state or local permits that regulate the firing of sewage sludge at this incinerator:  
Permit Number: \_\_\_\_\_ Type of Permit: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## 10. Disposal in a Municipal Solid Waste Landfill.

(Complete Question 10 if sewage sludge from your facility is placed on a municipal solid waste landfill. Provide the following information for each municipal solid waste landfill on which sewage sludge from your facility is placed. If sewage sludge is placed on more than one municipal solid waste landfill, attach additional pages as necessary.)

- a. Landfill name: Amelia Landfill
- b. Contact person: Brian McClung  
Title: Manager  
Phone: (804 ) 561-5787  
Contact is: \_\_\_ Landfill Owner X Landfill Operator
- c. Mailing address.  
Street or P.O. Box: P. O. Box 168  
City or Town: Amelia State: VA Zip: 23083
- d. Landfill location.  
Street or Route #: 20221 Maplewood Rd  
County: Amelia  
City or Town: Jetersville State: VA Zip: 23083
- e. Total dry metric tons per 365-day period of sewage sludge placed in this municipal solid waste landfill:  
125 dry metric tons
- f. List, on this form or an attachment, the numbers of all federal, state or local permits that regulate the operation of this municipal solid waste landfill:  
Permit Number: \_\_\_\_\_ Type of Permit: \_\_\_\_\_  
540 \_\_\_\_\_ Non Hazardous Waste
- g. Does sewage sludge meet applicable requirements in the Virginia Solid Waste Management Regulation, 9 VAC 20-80-10 et seq., concerning the quality of materials disposed in a municipal solid waste landfill?  
X Yes \_\_\_ No
- h. Does the municipal solid waste landfill comply with all applicable criteria set forth in the Virginia Solid Waste Management Regulation, 9 VAC 20-80-10 et seq.? X Yes \_\_\_ No
- i. Will the vehicle bed or other container used to transport sewage sludge to the municipal solid waste landfill be watertight and covered? X Yes \_\_\_ No  
Show the haul route(s) on a location map or briefly describe the route below and indicate the days of the week and time of the day sewage sludge will be transported. I64E, I81S, 26S, 460E, 307E, 360E to Maplewood Drive to landfill. Hours M-F 0700-1200

## VPDES Permit Application Addendum

VPDES Permit No. VA0090671

1. **Entity to whom the permit is to be issued:** Alleghany County  
*Who will be legally responsible for the wastewater treatment facilities and compliance with the permit? This may or may not be the facility or property owner.*
2. Provide NAICS Code (Industrial Only) \_\_\_\_\_
3. **Is this facility located within city or town boundaries?** Y / N No
4. **Provide the tax map parcel number for the land where the discharge is located.** 04500-00-000-032C
5. **For the facility to be covered by this permit, how many acres will be disturbed during the next five years due to new construction activities?** 0
6. **What is the design average effluent flow of this facility?** 2.6 MGD  
For industrial facilities, provide the max. 30-day average production level, include units:

**In addition to the design flow or production level, should the permit be written with limits for any other discharge flow tiers or production levels?** Y / N Yes

If "Yes", please identify the other flow tiers (in MGD) or production levels:

3.5 MGD \_\_\_\_\_

*Please consider the following as you answer the questions in #5 above for both the flow tiers and the production levels (if applicable): Do you plan to expand operations during the next five years? Is your facility's design flow considerably greater than your current flow?*

7. **Nature of operations generating wastewater:**

\_\_\_\_\_

100 % of flow from domestic connections/sources

Number of private residences to be served by the treatment works: \_\_\_\_\_

       % of flow from non-domestic connections/sources

8. **Mode of discharge:** X Continuous        Intermittent        Seasonal  
Describe frequency and duration of intermittent or seasonal discharges:

9. **Identify the characteristics of the receiving stream at the point just above the facility's discharge point:**

X Permanent stream, never dry  
       Intermittent stream, usually flowing, sometimes dry  
       Ephemeral stream, wet-weather flow, often dry  
       Effluent-dependent stream, usually or always dry without effluent flow  
       Lake or pond at or below the discharge point

Other: \_\_\_\_\_

**10. Approval Date(s):**

**O & M Manual** 6/11/12, 5/14/14 **Sludge/Solids Management Plan** 6/11/12, 5/14/14

Have there been any changes in your operations or procedures since the above approval dates? Y/N No

**11. Privately Owned Treatment Works**

If this application is for a privately owned treatment works serving, or designed to serve, 50 or more residences, you must include with your application notification from the State Corporation Commission that you are incorporated in the Commonwealth AND verification from the SCC that you are in compliance with all regulations and relevant orders of the State Corporation Commission. Incorporated also includes Limited Liability Companies (LLCs), Limited Partnerships (LPs) and certificates of authority.

**12. Satellite Sewer Systems**

A satellite sewer system means a sewer system that is owned or operated by one person that discharges to a system that is owned or operated by a different person. Satellite sewer systems depend on a separate person for final wastewater treatment and discharge. List any additional owners with collection systems but no treatment plant discharging to your system. You may use the attached form or any other documentation you may have that contains the same type of information.

**13. Consent to receive electronic mail**

The Department of Environmental Quality (DEQ) may deliver permits and certifications (this includes permit issuances, reissuances, modifications, revocation and reissuances, terminations and denials) to recipients, including applicants or permittees, by electronically certified mail where the recipients notify DEQ of their consent to receive mail electronically (§ 10.1-1183). Check *only one* of the following to consent to or decline receipt of electronic mail from DEQ as follows:

X Applicant or permittee agrees to receive by electronic mail the permit that may be issued for the proposed pollutant management activity, and to certify receipt of such electronic mail when requested by the DEQ. Email address: [brianw-ess@lumos.net](mailto:brianw-ess@lumos.net), [ghepler@co.alleghany.va.us](mailto:ghepler@co.alleghany.va.us), [ilanford@co.alleghany.va.us](mailto:ilanford@co.alleghany.va.us)

☐ Applicant or permittee declines to receive by electronic mail the permit associated with the permit that may be issued for the proposed pollutant management activity.